HOW CHANGING WEATHER PATTERNS AFFECT RAILROADS

August 13, 1973

RAILWAY AGE

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The shape of tomorrow?

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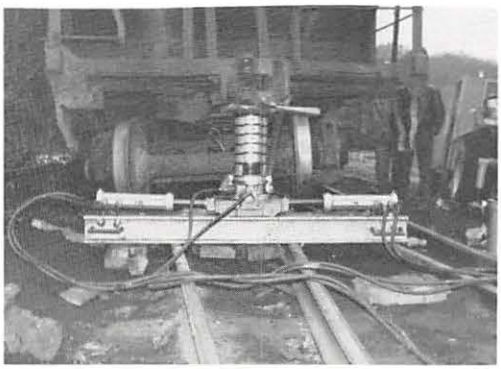
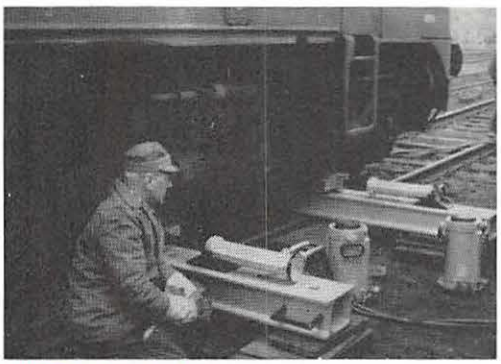
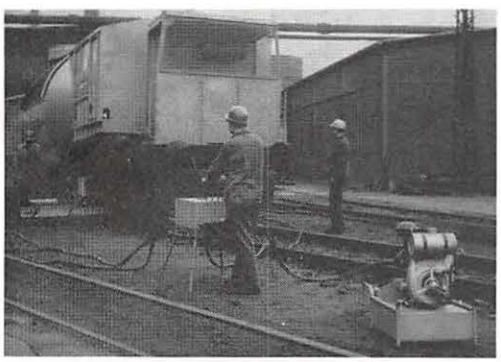


100 ton coal car with 66 ton multi-stage jack

Six-axle locomotive with 132 ton multi-stage jack



250 Ton Locomotive



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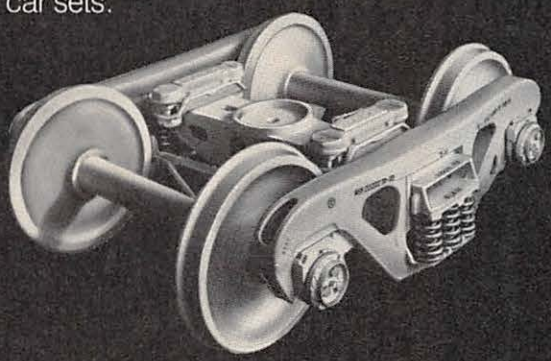
Circle 1 on coupon page 41

The Revolution Continues!

Within two weeks of the introduction of the new ASF T-11™ Suspension System, we had received commitments for over 600 car sets.



Several major railroads and car manufacturers have purchased these car sets. They immediately recognized the value of this revolutionary new design.

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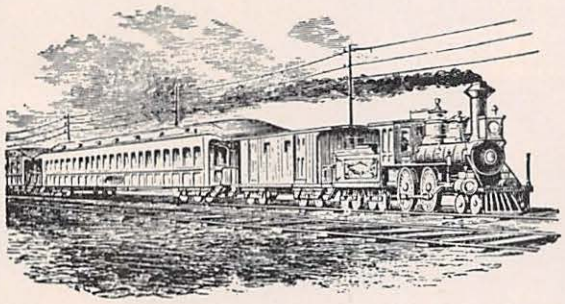
Okonite-Okoprene-Okoprene Railroad Signal Cable

Okonite's first railroad installation in 1878 was telegraph wire used to pass instructions for changes to manual signals. (Okonite makes a complete line of signal and control cables and track wire)



1875

First Chair Car (Okonite makes a complete line of car and locomotive wiring)

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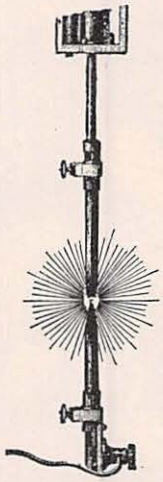

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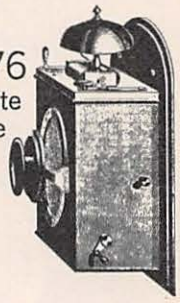

1877

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Okonite railroad cables are matched to the electrical, mechanical and environmental conditions of your application. You get the protection and performance you need for tough service—wet locations, heavy mechanical abuse, corrosive atmospheres, etc. Yet, because Okonite offers a variety of cable designs, you don't have to pay for cables that are over-insulated for your needs. The Okonite Company, Ramsey, N. J. 07446.

Okonite-Okoprene CMPF-Direct Burial Railroad Signal Cable

OKONITE

OK-427

Since 1878: a job-matched Okonite cable for every railroad need.

Circle 4 on coupon page 41

RAILWAY AGE

August 13, 1973 • Vol. 174 No. 15

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Inside

LUTHER MILLER

A MIXED BAG

There are still those who would relegate the "emerging technologies" in guided ground transport to a Mickey Mouse factory. But one or two concepts are now emerging with considerable strength. Mechanical Editor Fred Houser's assessment starts on p. 32.

There has been, as railroaders know, a change in the weather. Has it been a series of flukes—or are patterns developing that railroad men need to take cognizance of? Engineering Editor Merwin Dick sought the opinions of several climatologists and meteorologists. His report, which some may find chilling, begins on p. 20.

Our 50th anniversary story on the Alaska Railroad (p. 24) carries a familiar byline. Tom Kizzia researched and wrote the story. He is the son of Joe W. Kizzia, who was Railway Age's executive editor for a number of years (and is now managing editor of Banking, which Simmons-Boardman publishes for the American Bankers Association).

COMING SEPT. 10: "PRODUCTS FOR PRODUCTIVITY"

pro-duc-tiv-i-ty: the degree of effectiveness of industrial management in utilizing the facilities for production: esp. the effectiveness in utilizing labor and equipment.

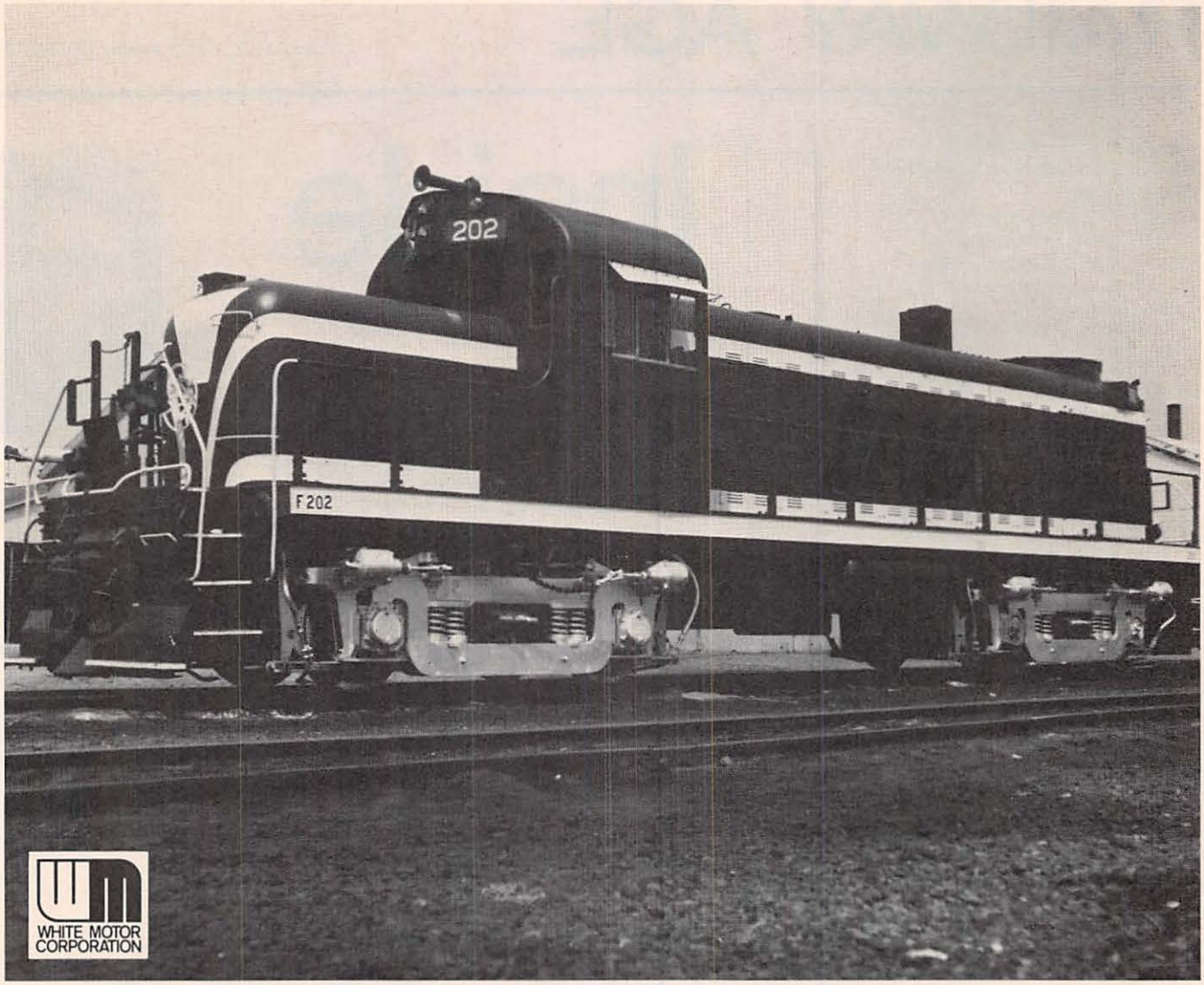
Wresting maximum productivity from the invested dollar, whether that dollar is invested in labor or in equipment, is a constant challenge to railroad management. It was a growing consciousness of the role that productivity must play in determining the present prosperity, and the future viability, of the railroads that led Railway Age this year to embark upon a series of "Profit through Productivity" articles.

In our July 30 issue, we covered labor productivity ("The People Potential"). Other articles in this year-long series have touched upon the equally important role that must be assigned to equipment productivity.

These articles have, implicitly and explicitly, emphasized the contribution which railway-equipment manufacturers have made, and are making, in the productivity race.

So much so, indeed, that we have decided to devote one whole segment of this series to the manufacturers. It will be published Sept. 10—an issue we picked because it will have wide additional distribution at the annual conventions of railroad technical men—and the theme will be "Products for Productivity." There will be separate photo-and-text sections covering the mechanical, roadway and structures, and communications and signaling departments.

If this issue does nothing more than to underscore the railroad/supplier teamwork which has made this a great industry, and is going to make it a greater one, then it will have served its purpose.



Save your money

Before you decide to purchase new switching and transfer locomotives, compare the cost of new units with the cost of rebuilding your fleet of ALCO road switchers. A new 1500 HP switching locomotive will cost over $200,000. The ALCO RS3 shown above was rebuilt by John Fox, Master Mechanic in his Toledo, Peoria and Western shop and included an ALCO factory rebuilt 244 engine carrying ALCO's standard warranty. Take advantage of this money saving opportunity to modernize your switching and transfer fleet. Your ALCO salesman will be glad to discuss this with you. Write: Alco Engines Division, Auburn, N.Y. 13021 U.S.A.

ALCO

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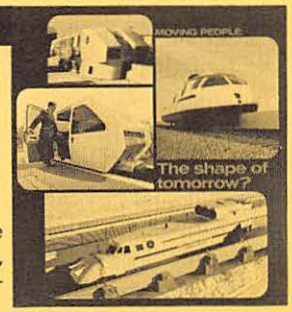
RAILWAY AGE

AUGUST 13, 1973

FEATURES



COVER
Contenders in new technology derby include (clockwise from top left) Rohr UTACV, Garrett LIMRV, Grumman TACRV, and Pullman Palomino.

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Short and Significant

CN TO DOUBLE-TRACK 45 MILES

Canadian National is ready to begin work on a 3½-year, multi-million project involving double-tracking of 45 miles of main line between Winnipeg and Portage la Prairie, Man. The 1973 portion of the program will include sub-grading and ballasting. Concrete ties will be used—the first such major installation in Canada.

MATERIAL COSTS UP SHARPLY FOR NW

Material costs have been going up faster than labor costs for Norfolk & Western, a condition virtually without precedent in recent times. Materials were up 12.8% in the first half of 1973 while labor was up 11.4%. Typical of material cost rises are ties, up $1 each over last year, and diesel fuel, which averaged 13.6 cents per gallon in the first half and is currently costing NW 17 to 18 cents per gallon.

SCL PLANS $33.5-MILLION YARD PROGRAM

Seaboard Coast Line will expand and modernize its freight yard at Waycross, Ga., at a cost of $30 million, and will invest another $3.5 million in enlarging its yard at Baldwin, Fla. Waycross, which is about 75 miles northwest of Jacksonville, Fla., is a focal point for SCL with lines radiating out in six directions. The existing facility will be converted into a hump yard complex covering 650 acres. The expansion at Baldwin will involve addition of a number of new tracks.

SP OPENS WEST COLTON YARD

DOT Secretary Claude W. Brinegar, FRA Administrator John W. Ingram and about 1,000 other government and business leaders joined Southern Pacific President Benjamin F. Biaggini July 19 for the official opening of SP's new $39 million freight yard at West Colton, Calif.—"the most technologically advanced railroad terminal in the world." Brinegar said the 7,000-car, 560-acre West Colton facility, which is 50 miles east of Los Angeles, represented "a vote of confidence in the future of America's railroads."

RATE HIKE WILL YIELD $570 MILLION

Railroads now estimate that their proposed 5% general rate increase will yield $570 million annually, rather than the originally-forecast $619 million. This is because of downward adjustments in certain areas and on some commodities. Following the announcement that the Phase IV economic program would exempt public utilities, including railroads, from price freezes after Aug. 12, railroads asked the ICC to let the already-approved increase become effective Aug. 13.

"AGREED CHARGES" HIKE DUE IN CANADA

Canadian traffic which moves under "agreed charges" will be subject to a 6% rate increase Sept. 1. This traffic, involving about 1,700 commodities, accounts for roughly one-fourth of all railroad freight movements in Canada.

CHESSIE DISPOSES OF READING HOLDINGS

Chessie System has sold privately its entire holdings of Reading Company stock, 45% of the outstanding shares entitled to vote. Chessie's Baltimore & Ohio has been a major owner of Reading stock for about 70 years.

INITIAL CLEARANCE FOR SOUTHERN/NS MERGER

ICC Administrative Law Judge Paul Cross has given initial approval and issued a proposed order clearing the merger of Norfolk Southern into the Carolina & Northwestern, a Southern Railway subsidiary. The roads filed for merger in 1972, noting that 600-mile NS would complement the lines of Southern in Virginia and North Carolina.

FOUR ROADS GET $27 MILLION IN FLOOD LOANS

Loans aggregating $27 million have been granted four railroads under the Emergency Rail Facilities Restoration Act of 1972 for repair of damage caused by Tropical Storm Agnes. Congress appropriated $35 million in recognition, for the first time, of the vulnerability of railroads to storm damage and of the burden imposed on bankrupt lines. Most repairs have already been made, DOT noted. Recipients are Penn Central, $17.28 million; Lehigh Valley, $4.24 million; Erie Lackawanna, $3.98 million; and Reading, $1.56 million.

TIERNEY SUCCEEDS HAMMOND AS TAA CHIEF

Paul J. Tierney has been elected president of the Transportation Association of America to succeed Harold F. Hammond, who retired from that post on May 31. Tierney, who had been TAA executive vice president and general counsel, joined the association in 1970, after seven years as a member of the Interstate Commerce Commission. Hammond joined TAA in 1955 as executive vice president and was elected president in 1962. Before 1955, he was manager of the Transportation and Communications Department of the U.S. Chamber of Commerce.

Why the railroad pros are pro AMER-Kleen:

If paper filter service life in month is . . .	. . . then the annual cost of paper elements equals . . .*	. . . plus additional fuel cost . . .**	. . . totals annual paper filter cost including fuel . . .	. . . resulting in annual savings with AMER-Kleen.***
4	$1,110	$160	$1,270	$1,010
5	888	160	1,046	786
6	740	160	900	640
7	634	160	794	534
9	493	160	653	393
10	444	160	604	344
12	370	160	530	270
15	296	160	456	196
21	211	160	371	111
33	135	160	295	35
44	101	160	261	1

*Paper filter costs based on $370 per change.

**AMER-Kleen operates at 4" less resistance for an additional annual fuel savings of $160.

***AMER-Kleen cost based on scheduled 3-month maintenance (four changes per year at $65 per change—$260 per year).

Figures shown for SD-40/SD-45 Locomotive.

Whether you're specifying original equipment or converting existing locomotives, AMER-Kleen cartridges can save you hundreds of dollars per year per locomotive.

Not only are AMER-Kleen replacement costs lower than paper, but AMER-Kleen can save an approximate 1600 gallons of fuel, or about $160.00 per year per locomotive, when used in place of paper filters. This is based on the fact that AMER-Kleen operates at 4" less resistance than paper and, since higher resistance takes horsepower away from tractive effort, significant fuel savings are realized.

When you combine fuel and replacement savings, it takes a paper filter service life of 44 months just to *break even* with the cost of an AMER-Kleen.

For complete information on how much your road can save with AMER-Kleen, write: Manager, AAF, Railroad Products and Systems, Dept. 111, Box 1100, Louisville, Kentucky 40201. In Canada: 400 Stinson Blvd., Montreal 9.

Better Air is our Business.

AAF American Air Filter
RAILROAD PRODUCTS

Circle 6 on coupon page 41

RAILWAY AGE
NEWS

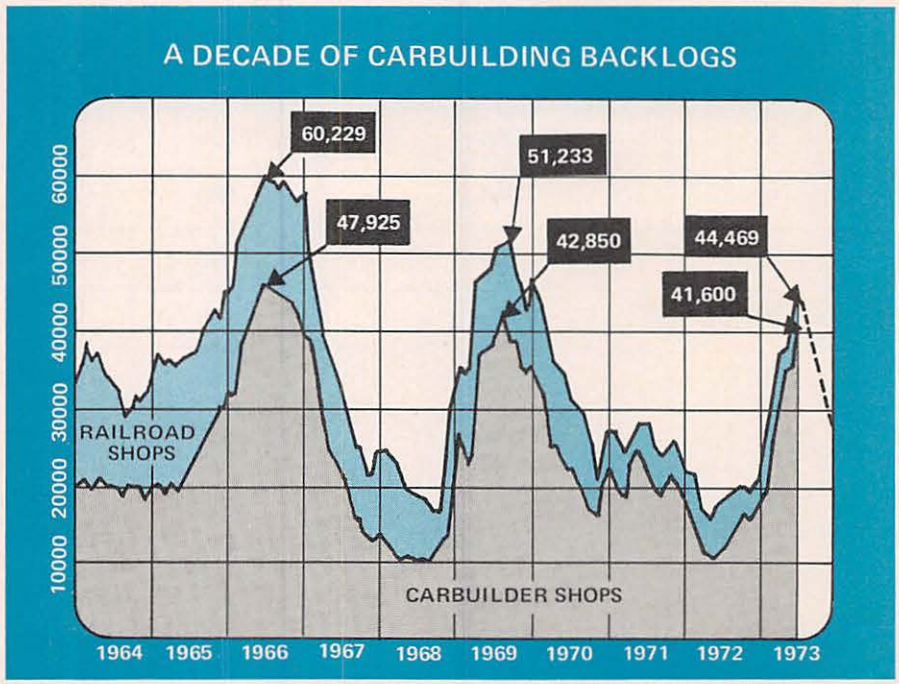
Is the car market approaching a new peak?

Orders for new and rebuilt freight cars during the first six months of 1973 totaled 52,336, more than double orders for the comparable 1972 period and substantially above the figure for all of 1972. For the first half of last year, according to the AAR and the American Railway Car Institute, the total was 22,951. In June 1973, orders were placed for 10,964 new cars in commercial shops and for 700 in railroad shops. Thus June 1973, with a total of 11,664, became the fourth best month for car orders in 15 years, trailing only April 1969 (19,606), April 1973 (13,994), and April 1966 (11,865). Interestingly, this has meant the backlog of undelivered cars always peaks at midyear.

The sustained ordering levels and the reduced car production capacity in the industry have served to drive up the backlog of undelivered cars at a rate faster than anything experienced in almost two decades. Like it or not, railroads are confronted with a sellers' market which promises to be fraught with what one builder has described as "high interest costs, scarcity of raw materials, and future price, wage and other economic controls imposed by the Federal government."

Railroads have previously gone on car acquisition binges, but the current one differs markedly. Today the railroads themselves are virtually out of freight-car production. Last year, for instance, railroad shops got orders for under 12% of all cars to be built; the 2,772 cars ordered from railroad shops in the first six months of 1973 account for 5.3% of the market. In the recent peak periods, the railroads' own productive capacity has been significant: Of 84,245 cars ordered in 1969 the company-shop share was 29.5%; in 1965-1966 it was 26% of 188,727 cars; and in 1955, when 153,859 cars were ordered, railroad shops accounted for 46 %.

In all these earlier periods the in-house capabilities of Penn Central and its predecessors, Pennsylvania and New York Central, contributed substantially to the company-shop total. Baltimore & Ohio, Burlington, Great Northern, Pacific Fruit Express and Southern Pacific had shops which produced large numbers of cars. On July 1, 1973, the carbuilders' backlog was 41,600; in railroad shops it was 2,869.



Railway Age chart by F. N. Houser

Today's market also finds a number of the railroads' old-line commercial builders missing—done in by the high cost of maintaining idle facilities awaiting just such an upturn as that which started in June 1972 and has continued unabated to the present, despite the reluctance of some builders and suppliers to acknowledge the fact.

Earlier this year Fruehauf Railcar (formerly Magor) and General Steel Industries ceased freight-car production. In the wake of the backlog peak of August 1969, Evans Products' almost-new plant at Plymouth, Mich., and General American's general-service car plant near Chicago were closed, along with Pullman-Standard's Michigan City, Ind., facility. After the peak of June 1966, Transco closed two car production facilities.

Right now there is some beefing up of productive capacities at commercial shops—P-S, for instance, is tooling to build piggyback cars at Bessemer, Ala. Some of the smaller operators of earlier years have also expanded considerably so that recently Pacific Car & Foundry, North American Car and FMC had backlogs fully as large as (or larger than) that of Bethlehem Steel which often has occupied the Number 3 position in commercial carbuilding, behind Pullman-Standard and ACF.

Just last month the ARCI's Market Forecasting Committee announced that it expects 1973 orders to total 67,500 and deliveries to reach 61,000. If this is the case, the midyear backlog of 44,469 should shrink to under 29,000 by the beginning of 1974. If ARCI's estimate of the buying of 65,000 cars and building of 63,000 next year holds good, that year should see the backlog fluctuating around the 30,000 mark.

Production of cars at an annual rate of 61,000 to 63,000 means monthly production of just over 5,000 cars, a far cry from 1966 when commercial and railroad shops were turning them out at the rate of 7,500 cars a month for the entire year. What this means is longer lead times and a relatively sluggish response to either an upturn or downturn in traffic. A business as cyclical as carbuilding will probably not see any new commercial carbuilding entrants.

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Circle 7 on coupon page 41

Whiting finds so many ways to cut your service costs

There are an encouraging number of new ways to shave time from maintenance schedules. Your Whiting engineer can show you most of them.

Our reputation for improving rolling stock service techniques has led to some interesting assignments. Like developing *complete systems* for Progressive Spot Repair, for washing out covered hopper cars, for filling locomotive sand boxes faster, for moving and spotting cars by remote control.

If *you* are considering new or modernized maintenance facilities, let's get together and discuss *all* the ways to save money.

ASK FOR Bulletin GT-104 describing Whiting ROBOT Remote Control Car Progression Systems for a wide range of repair and service operations.

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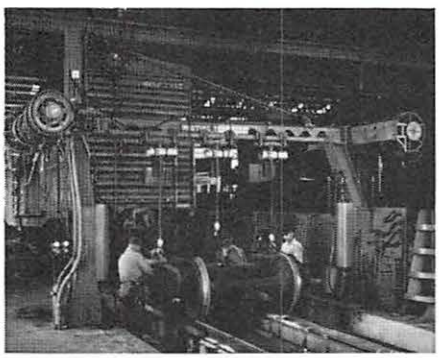
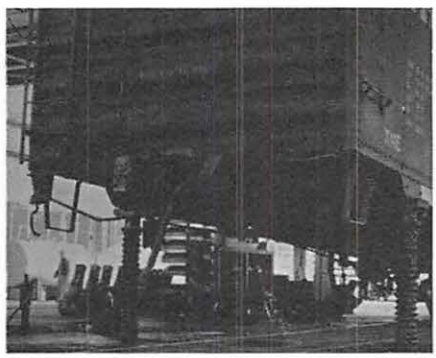
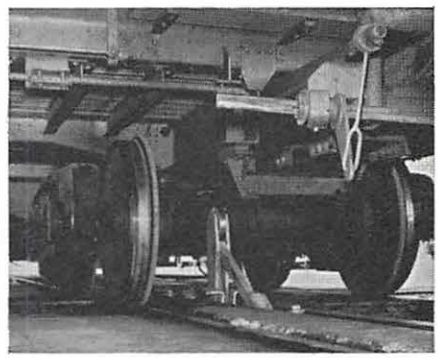


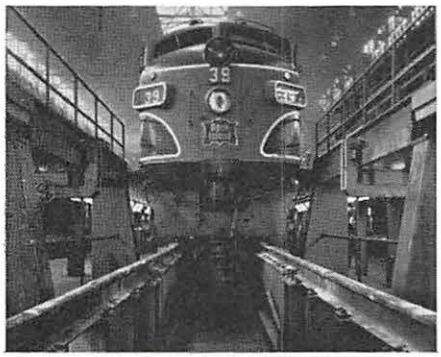
REPAIR STATION JIB CRANES



LATERALLY ADJUSTING RIPJACKS



"ROBOT" REMOTE CONTROL CAR MOVERS



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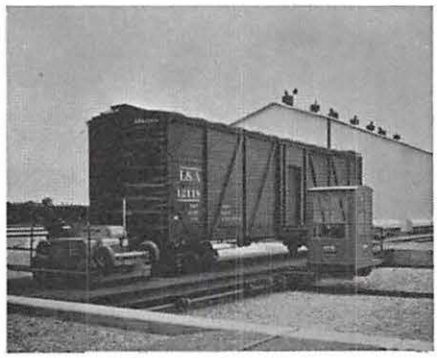

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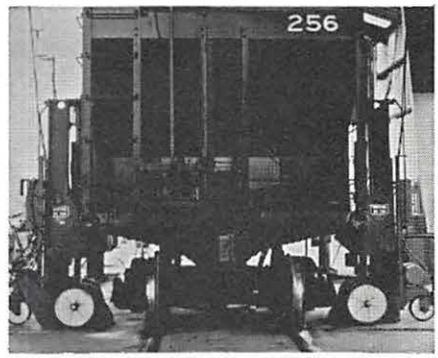
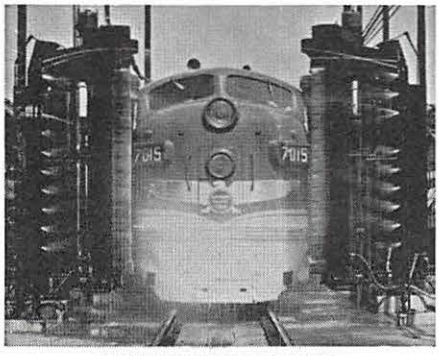
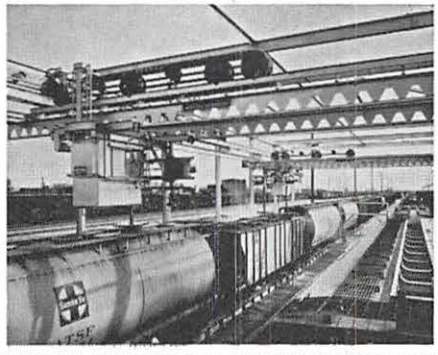


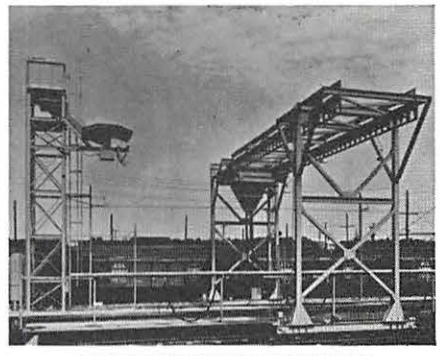
PORTABLE JACKS UP TO 50-TON



TRAIN WASHING SYSTEMS



WASHING INTERIORS OF COVERED HOPPER CARS



LOCOMOTIVE SERVICE GANTRIES

Circle 8 on coupon page 41

Los Angeles gets big transit plan

Los Angeles, which probably has the world's worst public transportation, mile for mile, now has what is without doubt the world's most ambitious plan for resolving the problem. Following an eight-month $600,000 technical study of the alternatives, a consulting team has proposed a 250-mile "Mass Rapid Transit (MRT) System. . .designed to serve all corridors of travel as they exist today and as projected in the future."

First priority would go to construction, over a 12-year period, of 116 miles of elevated, subway and surface transit lines in the six most heavily congested corridors of the Los Angeles Basin. There would also be 24 miles of exclusive-lane busways in two other major corridors.

Cost of the 140-mile first-priority system of transit lines and busways is estimated at $3.4 billion in 1973 dollars. This would bring the per-mile cost to $29 million, compared with $18.7 million per mile for the BART system, $31.6 million for the Washington Metro now under construction, and $20.6 million for the Atlanta (MARTA) system now getting under way.

However, an anticipated 9% escalation factor during the construction period is expected to bring the total cost to $6.6 billion.

Two-thirds of the money would come from the Federal government under terms of the Urban Mass Transportation Assistance Act of 1970. To finance the local share, the consultants are recommending a ¾ of 1% general sales tax within the Southern California Rapid Transit District, together with fare revenues and proceeds from the State Transportation Improvement Fund. The financing proposal could go before the voters in a referendum in 1974, following a series of hearings on the plan.

"These funds," said SCRTD in a statement explaining the consultants' recommendations, "would be supplemented by an issue of special tax bonds to be retired from sales tax revenues after the construction phase is completed."

Will the Los Angeles system be standard rail, or will it use one of the new guided transport technologies. Said the consultants: "In view of the advances being made in the state of the art, no commitment has yet been made as to the specific type of Mass Rapid Transit vehicle to be selected." They recommended that "options be kept open for approximately one year to permit serious consideration of magnetic-levitation and tracked air cushion vehciles, as well as more conventional systems."

Lines on Labor

GUS WELTY

TROUBLE IN THE NORTH

In the U.S., it all went rather smoothly. Representatives of management and the unions got together, talked about wages and benefits and railroad retirement, and came up with a package agreement—long before any "deadline," and without third-party interference. In Canada, the railroads and the unions have also been working on a contract—but their path has been anything but smooth. Actually in Canada, unlike in the U.S. most recently, negotiations have been going forward with five separate groups—the biggest being the so-called Associated Non-Operating Unions, eight organizations representing about 55,000 employees. It's this group that has been out in front—but coming along at one stage or another of bargaining are the shopcraft unions, the United Transportation Union (Trainmen), the UTU (Enginemen), and the Brotherhood of Locomotive Engineers. And, while it's too soon to say what the end result of all this will be, a couple of points seem relatively clear: (1) Settlement will be costly to the carriers, and, inevitably, to transportation users; and (2) the record will show—it already does—an unusual feature or two.

THREE RECOMMENDATIONS—AND NO AGREEMENT

The main issues with the associated non-op group have been wages and job security. Negotiations failed to produce a settlement and so did mediation—so, last March, the government created a conciliation board which, in Canada, means a board with a management nominee, a labor nominee, and a neutral chairman. In mid-July, the board came out with not one, not even two, but three separate reports, all differing in key respects. On the wage/benefit package, for instance, the carrier nominee recommended 19.66% over two years; the chairman recommended 22.96%; the union nominee went for 32.69%. The cost? By the railroads' estimate, implementing the chairman's plan and making it effective across the board would cost about $278 million over a two-year period. That, the railroads warned, would require a hefty freight-rate boost.

WALKOUTS BEGIN—HERE, THEN THERE.

All of this set the stage for confrontation—but nobody knew exactly what might happen, because the unions weren't talking much, aside from a comment to the effect that the organizations wanted to put the squeeze on the railroads but not on the public. And the unions finally came up with something just a bit new in the broad field of strike strategy: the regional, short-duration strike. On July 26 they hit all the railroads in Ontario for 48 hours. On July 28, they hit rail operations in British Columbia and Alberta, this one a 66-hour walkout. Quebec was next, for 48 hours starting July 31. And so it went—with the government, at the outset, keeping hands off and, at least through these opening strikes, with little obvious pressure applied to bring government in. As for actual operations, no trains ran while the strikes lasted—but the railroads *were* doing their best to clean up the to-be-struck provinces in advance, and they *were* doing their best to have trains ready to roll when the strikes ended. And, through that first round of confrontations, nobody really seemed ready to give.

Highliner crash: Causes and effects

Not surprisingly, the National Transportation Safety Board has come up with wide-ranging findings and recommendations, stemming from investigation of the Illinois Central Gulf commuter-train collision last Oct. 30 in which 45 persons were killed and more than 300 injured (RA, Nov. 13, 1972, p. 11).

Briefly, NTSB found a two-part probable cause: (1) The backing of a train made up of double-deck Highliner equipment "without flag protection into a previously-vacated signal block," and (2) the "failure of the engineer" of the following train, made up of older, single-level equipment, "while operating faster than the prescribed speed, to perceive the train ahead in time to avoid the collision."

In addition, NTSB listed three factors as contributory: (1) "Ambiguous rules which caused confusion among employees regarding the necessity to flag within automatic-block signal system limits," (2) the "reduced importance of flagging in suburban service implied by management's failure to enforce" certain rules, and, contributory to the high fatality toll, (3) the overriding of the underframe of the Highliner car and the resulting telescoping of the double-decker.

As for recommendations, NTSB had them for ICG and for FRA and UMTA. It proposed that the railroad improve rule-compliance through development of "books of standard interpretation" and regular tests of employee ability to interpret the rules in specific situations, and that ICG "review its organization systematically" to do something about such matters as the location of the conductor's brake valve and intercom station mid-car instead of at the end (rear) of car. It called upon FRA and UMTA to "justify or disprove" need for automatic systems or special procedures to prevent collisions in high-speed commuter service, and to develop technical approaches (including crash testing) to appraise crashworthiness of cars.

Earlier, NTSB had issued other recommendations to the railroad and the government agencies covering, so far as ICG was concerned, such things as tightening signal-block entry restrictions, making Highliner car-ends more visible and provision of speedometers on the older cars still in service.

Taken in full, the recommendations obviously cover a lot of ground. ICG noted that "all recommendations applicable to the railroad have already been adopted or are being implemented"—and questions turn up the specifics. For instance, a new car-end design has been developed and will be applied as soon as possible. Speedometers are being installed on the older commuter cars (and come as standard equipment on the Highliners). Since last November, no train has been permitted to re-enter a block without specific instruction (which, in ICG's commuter operation, is in the form of a train order). Since mid-1970, the road has had a Q&A manual designed to give uniform explanation of operating rules and eliminate ambiguity. Testing of employee ability to react under specific operating situations is in effect, and a stepped-up program of tests for engineers became effective earlier this year. When plans are approved by FRA, the road will make the changes needed to give conductors rear-end train control.

A rockier road for Rock Island

As one observer grimly put it, "Well, I guess that means the Northeast crisis now stretches all the way to Tucumcari."

It wasn't quite that bad. But it certainly wasn't encouraging, that Rock Island, after a somewhat-improved first quarter, was reporting sharply increased losses and another squeeze on its cash position.

After the first three months of the year, RI was reporting losses—but, on a revenue increase of more than $10.4 million, the loss had been trimmed from $5.9 million in the 1972 period to $3.2 million. Six-month figures, however, showed losses of $8.2 million, up from $4.9 million for the January-June period last year. At the same time, RI's situation on cash and short-term investments was turning bleaker: As of July 13, RI could add up only $2.1 million, down from $4.2 million a year earlier. The road was searching for short-or medium-term financial help from various sources, and indications were that RI's prospective merger partner, Union Pacific, would not be a source. T.E. Desch, RI vice chairman and chief executive officer, said there had been discussions with UP relative to obtaining working capital—but the discussions were not successful and, Desch said, they've been terminated.

As for the merger itself, Desch was less than optimistic—noting that the ICC administrative law judge's "approval" for UP-RI includes conditions "that are utterly unworkable and that differ radically from the stated terms in the plan and agreement of merger." UP, he said, has indicated that it won't accept many of the conditions if they are in fact upheld by the Commission.

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Watching Washington

THE WHITE HOUSE CALLS THE PLAYS

Transportation Secretary Claude W. Brinegar and Under Secretary John W. Barnum have been getting low marks from nearly all concerned for their handling of the Northeast railroad crisis. Actually, they have had little to say about it in a policy-making fashion. The Administration's hard line on the Northeast is coming directly from the White House. "President Nixon tells Shultz [Treasury Secretary George P. Shultz] who tells Brinegar who tells Barnum who tells Congress," is one insider's assessment. The President is insisting on a private-sector solution. Congressional leaders don't think this will work, and have offered plans calling for substantial Federal assistance in the creation of any new Northeast Railroad Corp.

Secretary Brinegar laid the Administration's position on the line when he spoke at the dedication of Southern Pacific's new freight yard at West Colton, Calif., on July 19.

BRINEGAR: "I WOULD RECOMMEND A VETO. . . ."

"We have found," said Brinegar, "that there is a serious danger that Congress will so involve the Federal government in the solution that, in time, nationalization becomes virtually unavoidable. The various northeast rail proposals being pushed by such key people as Senator Vance Hartke, Congressman Harley Staggers, Congressman Brock Adams, and ICC Chairman George Stafford go much too far in this direction—so far, in fact, that I would be forced to recommend a Presidential veto if any one of them is passed by Congress. Frankly, I've been surprised and disappointed that the leaders of the rail industry and the major users have not been more concerned about the consequences of these proposals and more willing to publicly oppose them."

Under Secretary Barnum took a similarly tough line at a Federal Bar Association seminar in Washington a few days later.

The Administration was incensed that Congressman Adams' House transportation subcommittee refused to "mark up" the Administration's no-aid Northeast bill (i.e., use it as a working paper) but instead accepted the bill of Rep. Richard Shoup (R.-Mont.) for that purpose. The Shoup bill embraces the so-called Union Pacific plan, which calls for considerably more Federal participation than contemplated by the DOT proposal (RA, April 30, p. 10). The Brock Adams forces, unable to get their own bill marked up, threw their support to the Shoup bill as being comparatively close to their own plan.

WHAT HAPPENS BETWEEN SEPT. 5 AND OCT. 2?

Congress recessed Aug. 3, and won't come back to Washington until Sept. 5. Penn Central's bankruptcy judge, John Fullam, proposes to proceed with a liquidation plan if Congress has not come up with an acceptable alternative by Oct. 2.

Administration sources say they are not certain Judge Fullam has the authority to order liquidation. In any event, Secretary Brinegar said recently, nobody knows just what "liquidation" would mean: "We've never been through a big railroad liquidation in this country, you know." Which prompted one railroader to observe, "I've never experienced the end of the world, but I can imagine what it would be like."

New York plan has billions for rails

Voters in New York State will be asked in November to approve a $3.5 billion transportation bond issue. Of the total amount, 60% would go for mass transit, including commuter railroads, and 40% for highway construction. Under the proposal, the state would also provide substantial transit operating subsidies, thus freezing New York City and commuter rail fares at present levels for at least two years.

The legislature approved the bond issue referendum in the closing hours of a special session July 31, despite considerable feeling that too much of the funds would go to highway construction. It was pointed out that the highway funds would be matched by the Federal government on a 90-10 basis, thus giving highways what many felt was a disproportionate edge. Two years ago a smaller bond issue, for $2.5 billion, was defeated at the polls. It would have provided 58% of the resulting funds for transit. Its defeat was blamed in large part on the work of the anti-highway lobby.

As proposed by Governor Nelson A. Rockefeller, and supported by New York City Mayor John V. Lindsay, the new bond issue would pay for a large number of transit and commuter rail improvements, including new subway construction, purchase of new subway cars, and acquisition of 400 gas-turbine electric cars for suburban operations.

Proposed rapid transit systems for Buffalo and Rochester would also benefit substantially from the passage of the bond issue.

Washington Metro delayed six months

Opening of the first 4.6 miles of Washington's rapid rail Metro system is now set for June 30, 1975. The new delay of six months has been occasioned by "coordination problems between construction of the National Visitor Center and Metro's Union Station-Visitor Center stop," according to Roy T. Dodge, chief of design and construction for the Washington Metropolitan Area Transit Authority.

Dodge said that Metro board members had been informed that this site for the introduction of Metro rails into the underground portion of the system would not be available on schedule. This, in turn, will delay other contracts which must be completed in sequence.

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A change in the weather batters, and baffles, the railroads

By MERWIN H. DICK
Engineering Editor

From recent events one might deduce that disastrous floods have been hitting the railroads harder and more often than in the past. A natural further deduction is that perhaps a pattern is being established that will see the continuance of these more disastrous and more frequent floods in the future.

There is basis in fact for the first deduction—and some basis in climatologial conditions and trends for the second. Consider these extremes of weather and the damage they have inflicted on the railroads:

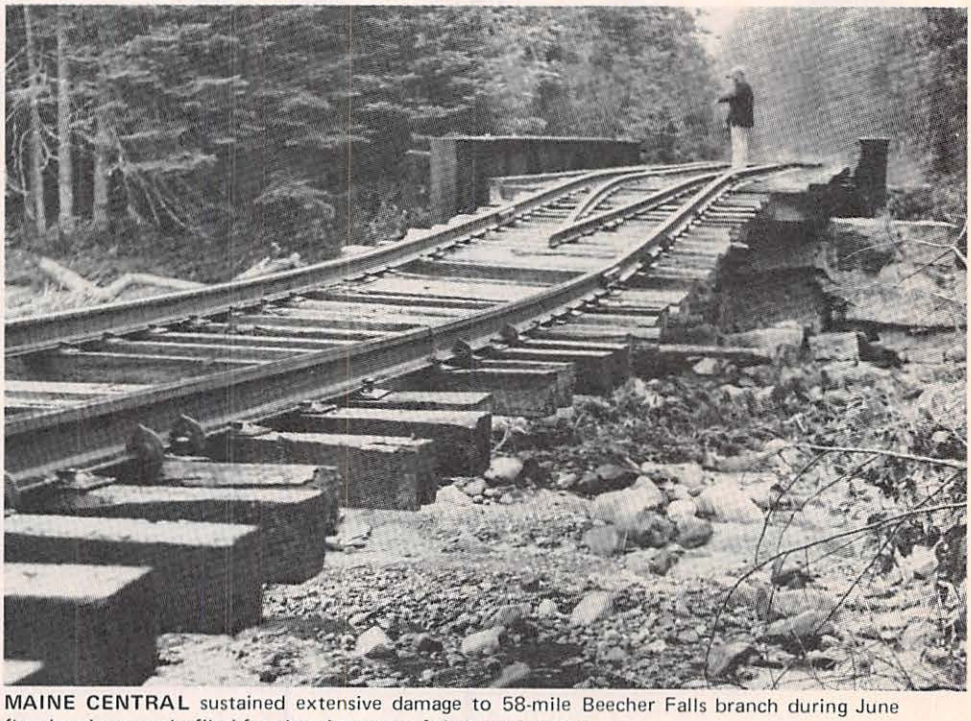
Spring 1969—Near-record flood waters in the Mississippi river resulting from the melting of a deep snowpack in the upper valley. Damage to railroad property was kept down by advance preparations made possible only because of early warning signals from the U.S. Weather Bureau.

Summer 1969—Hurricane Camille and the tidal waves and unprecendented rains she brought with her wrought extensive damage to the main line of Louisville & Nashville along the Gulf Coast, the main line of Southern south of Washington, D.C. and also the Norfolk & Western and Chesapeake & Ohio.

Summer 1972—Unprecedented rainfall generated by Tropical Storm Agnes over a large area of the Southeast and Northeast, with estimated damage of $40 million to fixed railroad property. A year later repairs have still not been completed at locations of extreme damage.

Spring 1973—The worst floods ever in the Mississippi, mostly south of Davenport, Iowa, causing flooding or washouts on practically every railroad serving the area. Frisco was probably hit the hardest with lines out of service for periods ranging from a few days to two months. Other roads hit were Katy, Missouri Pacific, Chicago & North Western, Rock Island, Norfolk & Western, Kansas City Southern, Illinois Central Gulf and Burlington Northern. Question: How much worse would the flood have been if the rainfall causing it had been augmented by water from the noraml snowpack in the upper reaches of the valley? This year the snowpack was much below normal.

Not included here are numerous more-localized floods, some of which were more vicious in their attack than the more widespread storms. In this category was the flashflood at Rapid City, S.D., in 1972, which caused the death of some 230 people while, not so incidentally, administering severe lumps to the North Western and the Milwaukee.



MAINE CENTRAL sustained extensive damage to 58-mile Beecher Falls branch during June flood and promptly filed for abandonment of the marginal line.

● **"Monotonous—and expensive."** In the space of four years, railroads somewhere in the United States have been attacked on a major scale by record or near-record storms, with consequent heavy costs in terms of damage to fixed property and rolling stock, rerouting of traffic and lost revenue. As one railroader noted in recounting the experience of his road during the recent flood in the Mississippi, "This can get a little monotonous." It can also get to be very expensive.

The question of whether climatic conditions are actually changing in the direction of heavier and more frequent storms—or if the experience of the last four years is just a passing phase—was put by Railway Age to a number of meteorologists in both private practice and government service. As almost everyone knows who watches television, reads the papers or listens to the radio, weather forecasting, even from day to day, is an inexact science. Furthermore, there is a disposition on the part of climatologists, especially those in government service, to make the point that at almost any given time the weather is being unusual, or is establishing new records, somewhere in the country.

● **Are rains heavier?** With these points out of the way, there is still an area left for discussion of the factors that affect climate and whether any of these are pushing our weather in one direction or another. One of those who believes there are such factors at work is Earl S. Finckle, president of Central Weather Service, Wheeling, Ill. Finckle, who makes 100 live weather forecasts each week over four radio stations in the Midwest, says he has noted in recent years that individual weather systems are producing an unusual or excessive amount of precipitation.

As examples of this phenomenon, Finckle cites a cloudburst during the summer that produced about 19 inches of rain in about six hours at a location in Missouri. Another example cited was the 6-inch rainfall that came in New England late in June (and inflicted heavy damage on Maine Central lines).

● **Pollution the culprit.** Finckel says he first noted this pattern of excessive precipitation eight or ten years ago, and he believes he knows at least some of the factors that are causing it. One is pollution of the atmosphere, mostly over industrial centers but elsewhere as

Record floods east and west; a snowbelt in the South: Is a pattern starting to emerge?

FRISCO was seriously affected by 1973 flooding; its operations were disrupted for weeks until Mississippi subsided.

SEABOARD COAST LINE was brought to a standstill in Southeast when heavy snow, far below usual storm track, buried Carolinas.

MISSOURI PACIFIC built sandbag dike at St. Louis to protect its facilities (and several industrial plants) where Army Engineers project resulted in gap in levee.

well. Contamination from industrial wastes, says Finckle, acts as nuclei for the condensation of moisture, thereby contributing to the amount of precipitation. An interesting point about this added precipitation is that it occurs "downstream" from the industrial center producing the contamination—the term "downstream" in this case meaning the direction from the industrial center in which the weather systems customarily move.

A snow study made at La Porte, Ind., was cited by Finckle as an example of how the industrial contamination theory works. The study came about because La Porte had been experiencing an abnormally large amount of snow. The conclusion was that the snow was being produced by contamination getting into the atmosphere from industrial wastes at Chicago. La Porte is "downstream" from Chicago.

● **What St. Louis study showed.** Finckle's theory about the effect of air pollution emanating from large cities is confirmed by a two-year study made at St. Louis by the Illinois State Water Survey. The study showed that cities cause an increase of rain and hailstorms over their urban areas and for distances of 25 and more miles downwind.

Now the study has been broadened to determine how and why the increased rainfall takes place. The new study is being conducted by the University of Illinois under a grant of $211,400 from the National Science Foundation. Included in the project is a study of rain, clouds, hail and other weather phenomena in 3,800 square miles of territory, which includes St. Louis, the area west of the city and an extensive downwind area extending eastward to Greenville, Carlyle and Nashville, Ill.

Data collected in the past two seasons indicate that:

—At East St. Louis (downwind from St. Louis) days of heavy rainfall in summer are more frequent than upwind; total summer rainfall is 20% greater; rainstorms last longer and cover greater areas.

—At Edwardsville, 20 miles northeast of St. Louis, 20% to 30% more rain occurs in summer than in areas west of St. Louis, the increase coming in greater rain intensity rather than as more storms.

● **Effect of jet exhausts.** Another form of pollution that may be contributing to greater rainfall has been noted by Finckle and other meteorologists. Exhaust from jet planes, they say, is in the form of water vapor which adds to precipitation potential. Also, jet exhausts include particles of waste matter which again act as nuclei for condensation as do wastes from industrial centers.

That this form of pollution can make a marked difference in rainfall was indicated by a study made to determine

Pollution, jet plane exhaust and cloud seeding could all have a role in the current heavy rainfall

the cause of unusually heavy rains at particular locations in Iowa. Meteorologists were convinced they had the answer when they found that the heavy rains were occurring at points of intersection between main airline jet routes. (A railroad roadmaster at one of these locations might wonder why he was having water problems while his counterparts on neighboring territories were experiencing relatively dry weather.)

● **Cloud seeding a factor.** A factor complicating the weather situation for the railroads as well as others is the activities of diverse groups attempting to influence precipitation locally for one reason or another. One study showed that over a five-month winter period private experimenters were working at 27 locations, seeding clouds over 14,000 square miles of the United States. Such efforts might be for the purpose of building up the snow cover on ski slopes or of augmenting snowfall in the mountains to replenish reservoirs that are dependent on melting snow for their supply of water.

A government meteorologist notes that cloud seeding activities can produce rain or snow beyond the range of the particular project. In any event, the practice of seeding clouds can produce problems and extra expense for the railroads if snow or rain is caused to fall on railroad property.

Even the government is involved in these "weather modification" activities. One such experiment involves efforts to determine if cloud seeding can cause snow to fall in the Great Lakes instead of on land where it might clog the highways. If these experiments prove successful the railroads could turn out to be indirect beneficiaries.

● **Problem not that simple.** From all this, one might easily get the impression that there are simple cause-and-effect explanations behind the flood problems the railroads have been having. But when any study of the subject passes from the matter of pollution and cloud-seeding to a consideration of the broader, even global, factors that influence weather, extreme complications set in. Weather variations are viewed by climatologists as being the result of various, sometimes numerous, influences, some working in the same direction and some tending to counteract each other. Natural phenomena that produce climatic variations include the interaction between the atmosphere and the oceans, the action of jet streams in the upper atmosphere, variable radiation from the sun and great volcanic activity.

Trying to determine the combined effect of all these influences on the weather at a particular location presents an extremely complex problem, and doubtless explains why government meteorologists are reluctant to make long-range weather forecasts. Such being the case, they are apt to fall back on a study of past weather trends and use these as the basis of at least making conjectures about the future. For example, one meteorologist said he had noticed that periods of drought can be expected to follow 20-year periods of normal or above-normal rainfall, and that on this basis a period of severe dry weather could be expected at some locations in the United States.

● **Polar regions getting colder.** Government meteorologists are, however, willing to point out changes that are taking place in climatic conditions and to speculate on their possible effect on the weather. One of these is J. Murray Mitchell, Jr., Ph. D., project scientist in the office of special projects, Environmental Data Service, National Oceanic & Atmosphere Administration, U.S. Department of Commerce.

Mitchell notes that an unexplained cooling of the polar regions has been taking place and he believes that one effect of this phenomenon was to move the snowbelt so far north last winter that it was entirely outside the United States. In his words, the record snows that fell last winter in some southern states were a "real fluke."

A somewhat different view was express by Earl Finckle. Discussing the effect of the cold high-pressure air mass circulating in the northern latitudes, he said that this cold air colliding with masses of warmer air has the potential of contributing to the formation of abnormal storm areas accompanied by precipitation. What happened last winter, he said, is that the mass of cold dry air from the north pushed farther south than normal early in the year, colliding with warm air from the Gulf of Mexico and producing the unusually heavy snows that occured in the South.

● **Effect on Mississippi flood.** The particular pattern of conditions that existed last winter did something else, according to Finckle:—It resulted in an early freeze in the upper Midwest, with snow occurring very early in the season in Minnesota, Wisconsin and northern Michigan. It also resulted in premature freezing of the upper Mississippi river, causing barge tows to be caught in the ice. Another point brought out by Finckle is that the particular and unusual combination of weather conditions that existed early this year over the Mississippi Valley found an abnormal amount of rain falling on frozen ground, causing rapid runoff.

The key to where snow will fall this coming winter, says Finckle, will depend on where the cold dry air from the northern latitudes collides with the warm air from the Gulf. If the cold air penetrates farther than normal into the South, as it did last year, it will be another winter of heavy snows in that region. On the other hand, if the collision point occurs farther north the pattern of snowfall will return to what is normally referred to as the snowbelt, with the amount possibly being heavier than usual.

Central Weather Service, says Finckle, is now preparing its forecast for the coming season for those of its accounts that need to know what type of weather can be expected to develop during the winter. If it is determined that the winter once again will be abnormally cold, then the conclusion will be that an abnormal amount of snow will fall in the southern states. If this condition prevails, there will again be an early freeze in the northern states, accompanied by heavy snows there at that time, Finckle says.

● **What to expect.** The complications and hazards of long-range weather forecasting aside, the railroads are faced with the distinct possibility that at least the near future will see a continuation of the flood pattern that has plaqued them in recent years. As one meteorologist observes, once a particular weather combination has become established "it takes a lot to change it."

Thus the railroads can hope for the best but they have to be prepared for the worst. That means keeping on hand a generous supply of loaded ballast cars, being prepared to come up with large quantities of sand bags and rip rap to protect vital installations and vulnerable embankments, maintaining storage piles of bridge-repair materials such as steel and timber piling and even entire bridge spans, and knowing where they can lay their hands on additional materials if they should be needed.

The railroads can do all these things, and they can also strengthen their properties where possible to protect them from flood damage, but in any severe flooding they are still going to be faced with heavy damage and the extra expense of repairing it. "We're spending a mint," said and engineering officer of a Midwest road as he talked of the experience of his company during and following the recent Mississippi floods.

As they contemplate the possibilities, the railroads might well raise the question why they have to be bankrupt to qualify for low-cost government loans when faced with large flood-repair expenses. ■

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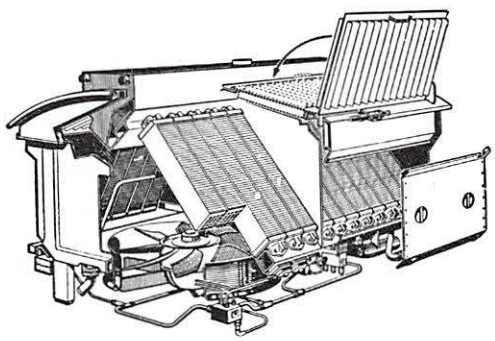

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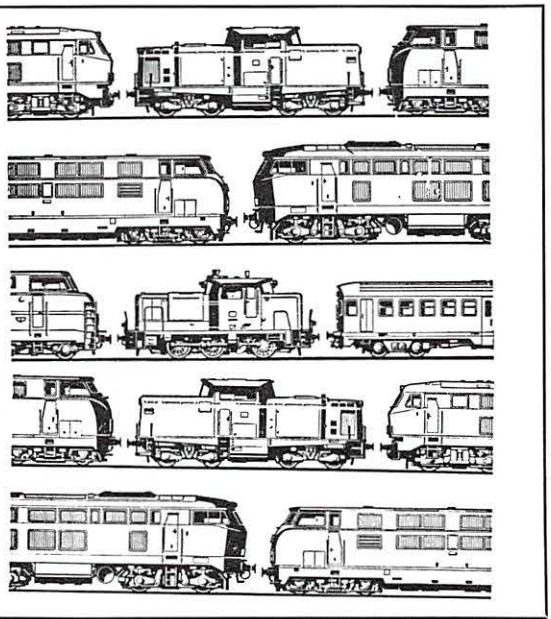

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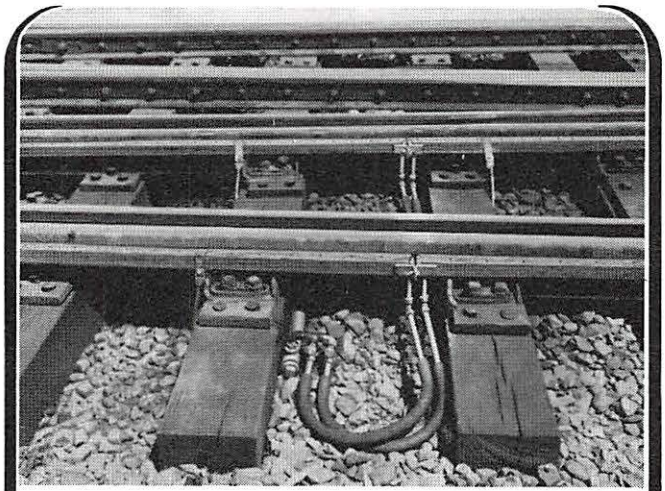

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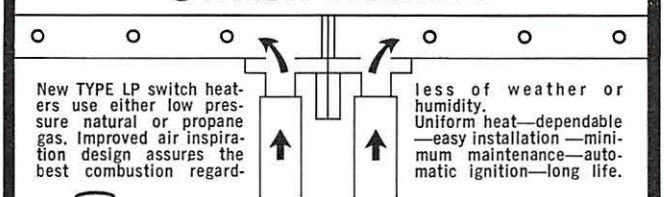

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1923: Warren Harding at golden-spike ceremony.

1973: John Ingram at golden-anniversary event.

WHEN IT HAULS materials

Alaska Railroad, at 50, faces an

By TOM KIZZIA

"The people of Alaska seem able to keep only one big issue on their minds at a time," Alaska Railroad General Manager Walker S. Johnston observed recently. "Right now that issue is the pipeline."

Indeed, the pipeline is practically all you hear about in Alaska now. Every day the state's newspapers give top space to the pipeline's changing fortunes; the development of the oil fields on the North Slope now seems inevitable, and most debate, at least public, is over tactics. Johnston has several things on his mind concerning the railroad's future that he would like the state to consider, but he is resigned for the moment to letting the furor over the pipeline fade first.

The railroad broke onto the front pages briefly last month when it marked its 50th anniversary. The celebration came at a time which is as much of a crucial watershed for the railroad, the only Federally-planned, -built, and -managed operation in the country, as it is for the state it helped develop.

Like Alaska, the railroad is counting on the development of the North Slope for a boost after several lean years, although some railroad people see the pipeline as a mixed blessing, at best. The ARR has suffered $3-million losses in two of the last three years, due partly to the opening of a new highway paralleling the rail route and partly to Alaska's static economy. Any increased revenue deriving from the North Slope will have to be substantial if it is to prevent the railroad's having to go to Washington for operating appropriations, something it hasn't done since 1939.

● **Bill of sale?** For 34 years the ARR has been a self-sufficient operation, with a good bit more independence than most government agencies. The fact that it has up to now been able to operate on its own revenues made it feasible for President Nixon to plan for its sale in his 1971 budget, as part of a more general campaign against Federal government competition with private industry. A bill presently before Congress would clear the way for its sale. Whether the railroad could operate without the Federal government, and indeed whether anyone would be interested in buying it, were two questions that were unanswered at the time of the 50th anniversary celebration.

The ARR's main business has always been hauling freight from Seward and Anchorage in south central Alaska into Fairbanks in the interior. For some time ARR has been nurturing the idea of expansion: north, into the oil-rich Arctic; west, into country with excellent mining potential; and east, aiming at an eventual rail linkup with British Columbia and the lower 48. It won't be long before America's last wilderness will be opened to development, but the government has been moving very slowly while considering the role of the railroad. The engineering problems encountered that far north have been solved; a corridor has even been selected north, down river valleys, across the tundra, and through Dietrich Pass in the Brooks Range. What has been lacking has been a solid economic reason to build.

● **"A pipeline can only carry oil."** General Manager Johnston is a strong advocate of the railroad's potential as oil-carrier—and as developer of the northern territory. "A pipeline can only carry oil. By putting a railroad through you could do that, as well as opening up the whole territory between here and the North Slope." He recalls the history of railroads in the U.S., and their role in leading the way for development of unsettled areas. "We've been reluctant to take chances here. The British Columbia government has been willing to extend its line on the theory that they'll find something to carry out. For them, it has paid off."

Estimates of the amount of rail traffic necessary to equal a pipeline's flow have gone as high as 48 115-car trains a day. "Even that would be only one every half hour," Johnston argues, "and you see trains that length all the time outside. When they say we don't have the capacity, it's only because no railroad has ever been called upon to haul the amounts of oil offered here. Jumbo tank cars can be built; the engineering has already been done."

Right now the plan for hauling oil out by rail seems more or less ignored most places outside of the ARR headquarters building in Anchorage. The oil companies want a pipeline. They have formed their own pipeline company,

for the North Slope pipeline, is the ARR carrying the seeds of its own destruction?

uncertain future

Alyeska, and their 48-inch pipe lies stacked over several acres in Valdez, a cozy little port on the southern coast which fancies itself "the Switzerland of America" and would lie at the southern end of the pipeline.

Should the pipeline be stopped by Congress or the courts, the railroad would be its logical successor. Right now, with the Senate having finally given the pipeline a green light, it seems likely it will go through—and the railroad will have to wait and follow it north. Extension west may have even more potential, but is on the back burner. And the DOT study didn't even go into the possibilities of moving eastward to Canada, although the Fairbanks yard was long ago expanded in anticipation of such a linkup.

Some of the pipe has already been carried north, by rail, to Fairbanks. Beyond that one shot haul the railroad's part in construction of the pipeline will be limited. A 10-mile spur was recently completed to the Fairbanks airport, which will facilitate moving freight to the oil fields. And for a while there will be parts and supplies to carry.

Mainly, however, the railroad is hoping for a statewide boom to increase business. The Alaskan economy has been severely depressed the last few years waiting for approval to begin construction of the pipeline, and the general feeling in Alaska now is that once it goes through, the economy will pick up immediately.

● **One step forward, two back?** In some cases the railroad may be carrying the

Will hoped-for extensions remain forever a dream? Will DOT decide to sell?

makings of its own future trouble. "When I talk about the pipeline it's with mixed feelings," says Assistant General Manager Red Allen, and that's something not many Alaskans are willing to say publicly these days. "At first we may get a temporary shot in the arm by hauling materials for them, oil rigs and such. But once they build a refinery up in Fairbanks they'll switch over to natural gas up there. That would mean up to $7 million a year in lost revenue for us, replacing the coal and oil we now haul there from Anchorage and the coal fields in Healy."

That's a lot for a railroad that rang up only $17,677,000 in operating revenues for fiscal 1973, down from $21,096,000 the year before. In 1972 ARR broke even; last year's drop-off meant a $3,034,000 net loss. The railroad's ton-mile rate is substantially higher than most U.S. carriers at 5.9 cents. That's Alaska's fault, not the railroad's, says controller Ed Callihan.

Most freight must come in first by sea. Special "vanships" carry freight cars and container shipments north, and at present form the only direct link with railroads "outside." Sea-Land, the railroad's biggest competitor as well as one of its best customers, charges almost 8 cents a ton-mile to truck over the same route. ARR is subject to rate regulation by the ICC, and it has had to keep pace with Sea-Land. Both recently applied for 7% increases.

There may be a crunch coming anyway, if not from operating revenues, then from equipment. "The time is coming when we may need Federal appropriations again," William Fravel, the ARR assistant general manager in Washington, said recently. "Even if the pipeline does increase our business significantly— which is unlikely, because a pipeline won't support the state's economy—it would mean problems with our equipment, because we're behind in our maintenance."

● **No capital budget** The railroad's shuffling of revenues to operate in the clear has kept it in a condition of deferred maintenance. Presently, the average freight car is about 30 years old; the average locomotive is 20 years old. The railroad recently replaced the converted World War II hospital cars it had been using on its passenger runs with used cars purchased from Union Pacific. In good years the railroad has been able to spend $2-3 million on capital improvements; but there was no capital budget this year, and none is planned for next.

Several times in the past 30 years ARR has received Federal money to update its facilities—most recently following the devastating 1964 earthquake,

(Continued on page 30)

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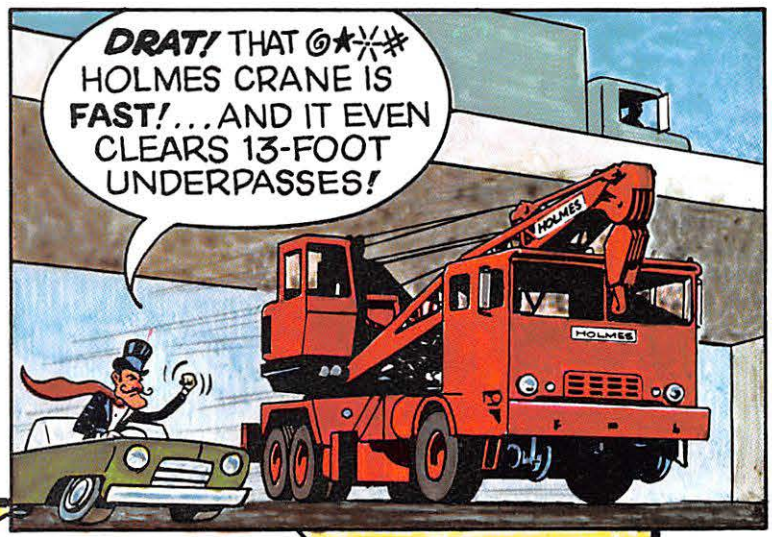

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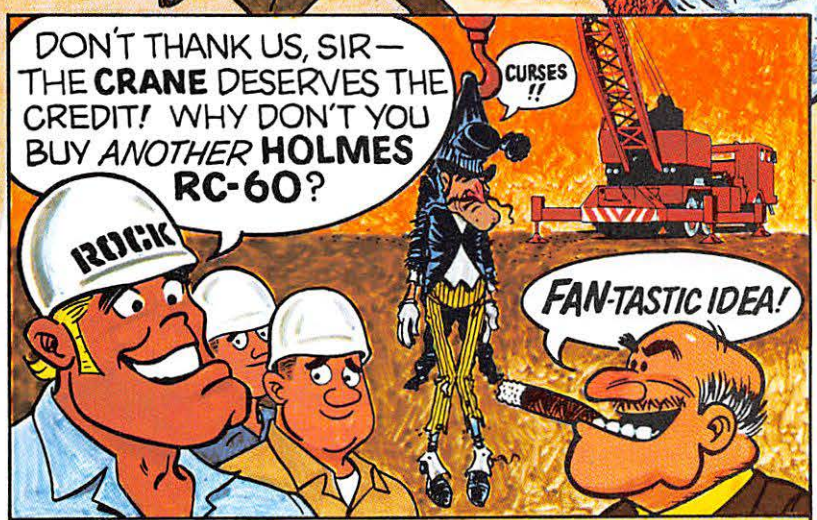

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Government ownership has its drawbacks, but political pressure, say ARR men, is not one of them

(Continued from page 25)
which left some $27 million of damage on the railroad's southern end. Responding as if to a family crisis, service was restored from Anchorage north in one week.

The ARR's "sense of place" is strong, and that, along with its autonomy and small size, keeps the operation more like a railroad than a Federal agency. An experiment to shuffle general managers every two years ended in the early Sixties when it proved disruptive. There has never been a strike on the railroad partly because of good labor relations and, Fravel adds, "I suppose they're still old-fashioned enough up here to think they can't strike against the government."

The family was all together again last month as Federal Railroad Administrator John W. Ingram drove a golden spike where President Warren G. Harding drove one July 15, 1923. It had long been acknowledged that a railroad was necessary to develop the last frontier, but the Federal government only took on the project in 1915 after two private companies had failed to get more than 71 miles into the interior. The completed railroad drew the military, and with them the population began to shift away from the southeastern panhandle toward the center of Alaska; Anchorage, with a third of the state's population today, began as a construction camp for the railroad.

● **Hostile climate.** The ARR has always had to face a few problems most U.S. railroads have been lucky to avoid. Like earthquakes, tidal waves, frost heaving and temperatures of -60°F. In the winter, daylight is sometimes barely worth turning off your lights for. Moose use the track for traveling, and have been known to charge an on-coming engine.

Nature can't be blamed for everything. The ARR faces the same problems of rising costs as most railroads. The cost of living in Alaska is some 25% higher than the rest of the U.S., and labor costs eat up 78% of the railroad's budget. Under the Federal Coordinated Wage System and the recently promulgated night differential, a machinist can make around $100 for an 8-hour day.

Uneven traffic flow has always been a major problem. Some 92% of the line's freight business is northbound; a little ore and some scrap come south.

In the face of these odds, the ARR has sometimes managed to turn a profit. But the pre-pipeline depression in Alaska has made it even more difficult to do that. Within the past year a new highway has been opened, directly connecting Anchorage and Fairbanks by road for the first time, and the railroad is retrenching.

● **Freight service cut.** Because the new highway stays close to the railroad for much of its route, the ARR decided the place to pull back was its local freights, not much of a revenue producer anyway. They run on a monthly instead of a weekly basis now. The railroad may also cut its winter passenger schedule from two runs each way a week to one. In the summer the tourist invasion provides plenty of traffic for a daily passenger run. The train never gets above 50 mph, and the 356-mile run from Anchorage to Fairbanks takes 12 hours.

The people feeling the brunt of the recent cutbacks are the several hundred families who live along the railroad in the country the highway avoided. They depend upon the local freight in the summer and passenger trains in the winter for their contact with the outside world.

Local service problem

"It makes it awfully tough for us to get supplies up here," complained one wife who lives out in that section of the bush. "But the fellows on the railroad are real nice and understanding. Sometimes they'll just look the other way if we have to bring a sled dog or chainsaw aboard. And if they hit a moose and can't stop to pick him up like they're supposed to, they'll tell us where he is so we can go get him for dog food."

"We've built up quite a reputation as a friendly railroad, and we're proud of that" says Assistant General Manager Allen. Yet another ARR employee confided, "We're trying to play down that bush part of the image. People are always impressed that we'll stop for anyone who flags us down out there, but frankly we don't always want to have to stop for every hunter or fisherman who happens to stumble across the railroad tracks." The people affected by the local line cutbacks wrongly blame the Federal Government for their problems, and the ARR management might slyly be able to cite that as one advantage of Federal ownership. A more substantial benefit is not having to pay any taxes. Fravel estimates that if ARR did pay taxes the bill would be around $3.5 million a year.

Being government-owned has its drawbacks, too. While the ARR is free of the ICC (except for rate regulation), its employees are covered by the Civil Service, which means among other things that 30 day notice must be given of layoffs, making it difficult to adjust expenses. The railroad must take bids for all the work it contracts out, down to the programs they had printed up for their anniversary. Going through the Civil Service and GSA means a lot of extra paperwork. The additional reports required by the government cost an estimated $200,000 yearly.

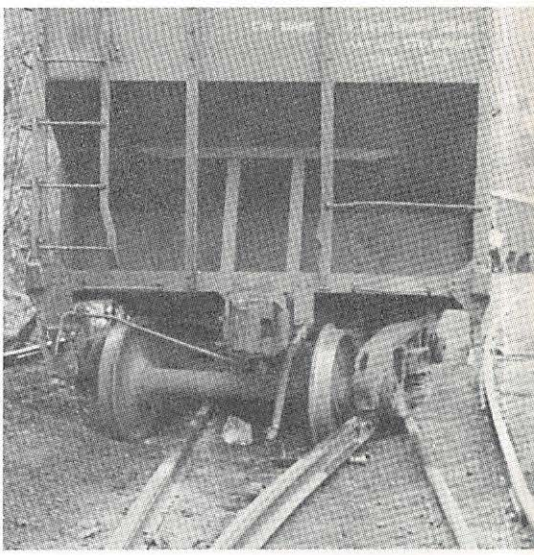
There have been few problems with outside political pressure. A rare call from a senator's office to suggest that ARR management lease land to heavyweight constituents is as much as anyone remembers. On the whole Johnston feels because of its public prominence there can be a lot less backscratching by ARR than by most enterprises.

● **"Pretty good autonomy."** Nor does the distance from Washington seem to have had much adverse effect on the railroad's operations. The general manager is appointed there but works in Anchorage with "pretty good autonomy." The Anchorage people admit, however, that when they must go to Washington for a decision they must sometimes wait for it until it is too late to do any good. "It's tough to roll with the punches," Red Allen concedes. But on the whole the frustration of being government-owned doesn't seem to be too difficult to live with.

In private hands the railroad might be run more flexibly, but Allen doubts anyone could wring more efficiency out of it. And, of course, a private owner would have to try to show a profit. Otherwise, considering the autonomy it already has, most personnel agree the ARR would be run pretty much the same way it is now.

The hard part may be finding a buyer. There have been several mild inquiries, including one from a group of Alaskans considering a native-run and-operated corporation. The Alaska state government isn't likely to buy it as long as it can rely on the Federal government to keep it going. "The important thing is that no matter who buys it, the essential services won't be changed," Johnston says. "No one's going to buy this railroad and then let it disappear."

For the time being the ARR will remain under the aegis of the DOT, and there is no great sense of urgency to find a buyer. In a few years, with a reinvigorated Alaskan economy and the prospects for expansion clearer and probably more certain, the railroad may find it has become an even more valuable institution. In that event, it may yet be private industry, and not the government, which pushes the railroad through to develop America's last great untested wilderness. ■



L&N DERAILMENT on mine spur switch near Hazard, Ky., was at point where rerailing frogs could not be used. Hoesch equipment was quickly placed and the truck was prompt-put back on the rails.

Hydraulic rerailer works fast

Derailment—that part of rail operations which everybody would just as soon not talk about—hits hard at the railroad pocketbook each year. For example, last year's 5,509 reportable derailments cost line-haul, switching and terminal railroads in the United States more than $90 million, an amount equal to nearly 20% of the net income of all Class I roads for the year.

Aside from damage to equipment and property—not to mention the casualties which sometime result—derailment can temporarily paralyze rail service and send productivity into a tailspin.

Considerable research activity on derailment-prevention is being carried out under the direction of the Association of American Railroads. But chances of a total solution to the multi-faceted problem appearing on the scene in the near future seem remote. Yet, railroads aren't up against a completely hopeless situation.

● **Fast service restoration.** In recent years, although no fail-safe cures for derailment have been developed, a measure of success has been attained in finding better ways of restoring normal service after a derailment, and at the lowest possible cost. One valuable service-restoration aid is an oil hydraulic rerailing device developed by Hoesch America Inc. Introduced to the U.S. in 1970, this rerailer system is used successfully on 19 U.S. railroad, industrial and transit properties. Among the system's important attributes are its relatively easy portability into sometimes remote locations, and its minimal labor requirements for getting equipment back on the track.

The Hoesch—America rerailer is a system, not merely a single device. It consists, basically, of as many as four telescopic jacks, a lightweight rerailing bridge and roller carriage, a displacing jack, a portable engine-driven pump, hydraulic hose lines and a control console which can be stationed a safe distance away from the equipment to be rerailed. Accessories are available for raising overturned rail equipment and for performing bridgework.

● **Prototype in Germany.** An outgrowth of a rerailer developed in 1926 by Maschinenfabrik Deutschland for the German railways, the H-A system made its 1970 debut on U.S. railroads as part of a test demonstration on Penn Central.

Louisville & Nashville became the first U.S. railroad to use the rerailer system on a regular basis. After observing the rerailer during demonstration on PC, the Louisville-based road assigned its first H-A system to its Hazard, Ky., yard in late 1971. This yard handles a large volume of coal hopper cars and the rerailer is capable of getting them back on the track after a derailment without tying up locomotives for long.

L&N acquired its second H-A rerailer a year ago and assigned it to the Nashville Division. In April and May of this year, another six rerailers were added to the equipment roster and assigned to important locations in Kentucky, Indiana, Georgia and Alabama. These recent acquisitions make L&N the largest user of H-A systems in the U.S. today.

● **Rerailing costs are lower.** Important savings are being reported by L&N through use of the Hoesch-America system. The demonstration tests on the PC indicated large potential savings in rerailing costs. L&N records show that, following a derailment, there is an opportunity to save many hours of locomotive time through use of the H-A system. Furthermore, L&N determined, the system treats derailed equipment more gently then other types of rerailing equipment. Loaded freight cars, 6-axle locomotives and other rolling stock are put back on the track with minimal damage to them.

Powerful enough to rerail a loaded freight car weighing 130 tons, or a 180-ton locomotive, the H-A system is relatively lightweight and compact. L&N moves the equipment to derailment sites aboard a truck equipped with hi-rail devices. Thus, if a highway is not near the derailment, the rerailing equipment can be moved easily and inexpensively to the site. In many instances, derailed rolling stock can be eased back on track without the help of a wrecking crane. If the derailment requires a crane, the H-A system still can be useful. ■

Moving People: Which of these is

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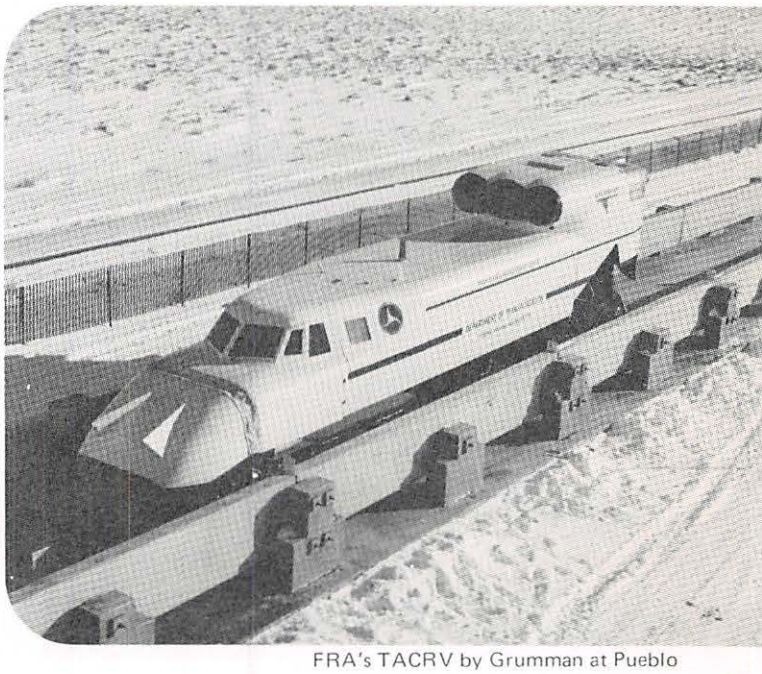
Germany and Japan have firm plans; the U.S. is interested

Krauss-Maffei's Trans-Rapid at Munich

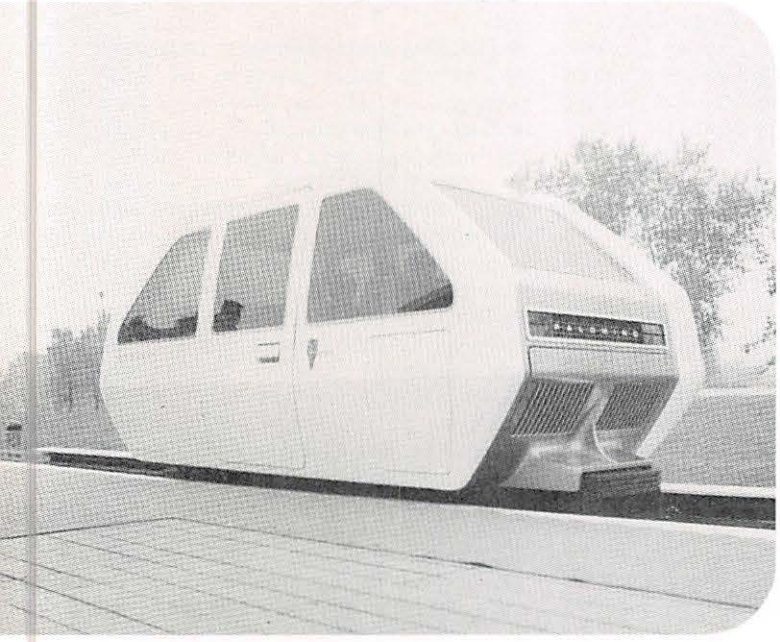
TACV

Those who know most about it are starting to back away



FRA's TACRV by Grumman at Pueblo

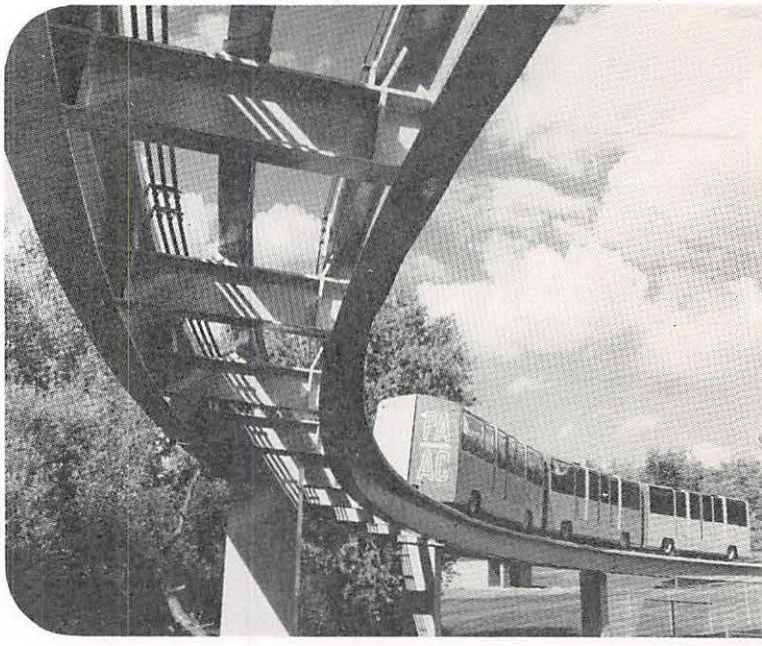
Pullman's Palomino testing near Chicago



PRT

Personal rapid transit has its place. But, where is it?

Westinghouse Electric's test near Pittsburgh



TRANSIT EXPRESSWAY

Tested and proved in service, it is already a winner

the shape of tomorrow?

By FRED N. HOUSER, Mechanical Editor

Suddenly there seems to be a cloud over the steel wheel on the steel rail when it comes to passenger transport. The most widely publicized research in the U.S. and overseas seems aimed at providing some other medium for land movement of people at speeds far higher than are possible today, both intercity and intracity.

The result is a whole new lexicon—TACRV, LIMRV, DLIM, Maglev, PRT, and a series of other acronyms. Despite the fact that tracked air cushion research vehicle, linear induction motor research vehicle, double-sided linear induction motor, magnetic levitation and personal rapid transit are now more than a gleam in some researcher's eye, it seems quite apparent that such systems seem destined to complement, rather than supplant, the steel-wheel, steel-rail modes *(see page 50)*.

● **Maglev's attraction.** Right now, magnetic levitation (either attraction or repulsion) seems to have put air-cushion levitation on the back burner, if not off the stove entirely. Toronto has contracted for a Krauss-Maffei attraction leivitation system to be demonstrated on a loop at its Canadian National Exposition grounds. The British have ceased further development of their air-cushion Hovertrain. The power required for magnetic levitation can be a relatively small portion of the total power consumed by an ultra-high-speed vehicle and K-M initially built a test track for its so-called Trans-Rapid designed for intercity service. Subsequently it built a low-speed Trans-Urban facility. Air-cushion levitation, either the British "peripheral jet" concept used on FRA's TACRV or the French "plenum chamber" used on UMTA's UTACRV, represents a fairly high power cost. FRA has considered a less expensive "ram air cushion" arrangement that so far has just seen a bit of laboratory analysis.

Maglev has captured the attention of such powers as Representative Brock Adams (D-Wash.), chairman of the House Transportation Subcommittee. After a recent visit to the Trans-Rapid and Trans-Urban test tracks of Krauss-Maffei, he told Railway Age that "it is the most interesting answer to passenger mass transportation that I have yet seen. It is noiseless, does not involve enormous roadbed maintenance cost and can be built over existing right-of-way. Operating costs are going to be fractional compared to present-day operations." Adams sees maglev coming in 10 to 20 years, adding that he doesn't think that TACV will prevail. He expresses considerable concern about the seemingly heavy involvement of FRA's Pueblo research facility in air-cushion work. Not only is there the present TACRV, but a new Urban TACRV is soon to be delivered and its separate, special right-of-way is under construction.

● **How it came to pass.** From the inception of the Federal high-speed ground transportation program some eight years ago, all manner of passenger-carrying concepts have been proposed and examined. After some rigorous screening, the advanced concept seen as having the greatest potential was the so-called "track levitated vehicle system," with either air cushions or magnets as the means of levitation. Air cushion investigation got a big lead since this started in 1966 and FRA's Advanced Systems group has been looking at magnetic levitation only for the past two years.

> Technology that was far-out only yesterday is rapidly becoming "in"

"We see air cushions and magnets as being the same thing, a means of levitation," explains Ed Ward who heads FRA's advanced group. "Our work on air cushions is way ahead because we got started on them so long before. We have a lot of catching up to do with magnetic systems."

Right now FRA's advanced group has R&D proposals which are expected to be translated into a pair of small sleds—one with repulsion maglev and the other with attraction magnets. They would be operated on the rocket sled track at the Naval facility at China Lake, Cal., at speeds up to 300 mph for appraisal. Choice then would be made on the basis of ride quality, acceleration and maintenance as to which one would then be translated into a full-scale installation of maglev at Pueblo. It is quite possible this might mean modification of the channel-shaped TACV guideway.

Fully as important as levitation is propulsion and this has involved linear induction motors, high-speed power collection, power conditioning and power control. While at one time advanced electrical drive was the only means possible, there is now some reason to look at self-powered vehicles. Long before that, however, FRA hopes to initiate a test of the single-sided linear induction motor which would not require the vertical reaction rail that is presently installed on the LIM track at Pueblo.

Just how much of any sort of motor and suspension research can be done by FRA at Pueblo is up in the air as Congress has cut its $10.7 million budget request in half. In addition, the cooling of Congressional interest in air levitation has caused it to direct that the UMTA Urban TACV activity be transferred to FRA, although no funds have been provided to carry on this added activity.

● **Boondoggle at Morgantown?** Now that UTACV seems to be in the hands (willing or not) of FRA, this leaves the Urban Mass Transportation Administration with its PRT, or Personal Rapid Transit, activities. Certainly this is no small-scale effort since some $63 million is being invested in a single project—a campus transportation system for the University of West Virginia in Morgantown. Through fiscal '73 some $43 million has been expended, and an estimated $20.4 million must still be spent to complete the 2½-mile system, according to UMTA Administrator Herringer. All this is a far cry from the $13.5 million which was the estimated cost of the Morgantown PRT when it was first submitted to UMTA for possible funding in August 1970.

House Appropriations Committee hearings on Morgantown funding found Congressman Silvio O. Conte (R-Mass.) inquiring as to the "cost per mile of that Morgantown kiddy-cart," and terming the installation a "political boondoggle."

Congressmen had difficulty in detecting the difference between Morgantown and such monorail projects as those in Seattle and Disney World. Herringer patiently explained that Disney World has no switching but traverses a circular route. "Disney World doesn't have any off-line station," he continued. "The stations are right on the line, which limits the capacity. Another difference is that the Disney World system has an operator on board. . . .The Morgantown system will not have an operator. The Disney World system is really a train that carries four or five cars and a couple of hundred people. On the Morgantown line it will be 10 to 15 people who can select their destination and the car can bypass the stations to which no people want to go."

The Alweg Monorail which went into

operation in Seattle in 1962 has had a checkered record. This supported system, which is 1.2 miles long and has a pair of four-car trains, has had a decline in receipts since 1970 and a ridership which has fluctuated as various fare experiments have been tried.

● **Transit Expressway.** In the mid-1960s, Westinghouse Electric came up with Skybus (today know as Transit Expressway because of a copyright problem). An experimental mile-long elevated loop was built for these electrically powered bus-size vehicles. This concept has since been operating as an airport distributor system at Tampa, Fla., and since June has been performing the same function at Seattle-Tacoma (Wash.) airport. Meanwhile the most ambitious Transit Expressway system, for which UMTA has provided both RD&D and capital grants, would link downtown Pittsburgh with its southern suburbs. This project has been the subject of extended legal action although something over $10 million has been disbursed by UMTA and the agency is prepared to disburse an additional $85 million this year. A start has been made on the actual line construction.

Of all the so-called "emerging technologies," the Westinghouse Electric system has so far emerged most successfully. One competitor paid Transit Expressway the ultimate compliment when he observed, after riding the Tampa Airport system, "I wish we'd invented that."

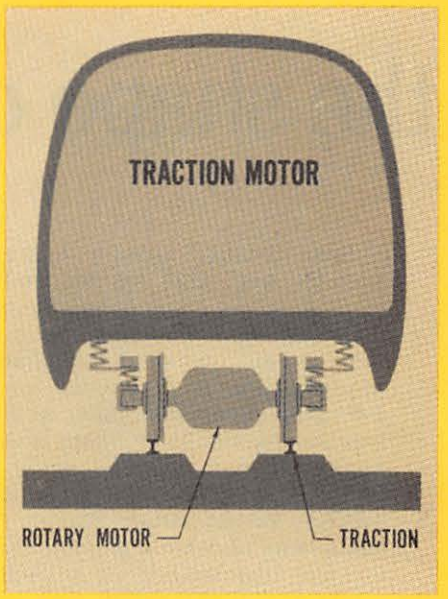
The Airtrans system, developed by LTV Aerospace, is not unlike Transit Expressway and has been installed at the new Dallas/Fort Worth airport for transportation of passengers, employees, baggage, mail and trash. The system contract, awarded in July 1971, calls for a rubber-tired, steerable vehicle that will be propelled automatically on a concrete U-shaped guideway by electric motors. A $7.6 million UMTA grant helped finance construction of Airtrans, a 13-mile line that serves four terminals, two remote parking areas, a hotel, the office of the Federal Aviation Administration and a maintenance area. Depending on system demand, Airtrans will operate with 68 vehicles serving 53 stations. There will be 10 discreetly scheduled routes—five for passengers, two for employees, and three for mail and baggage.

● **Whither PRT?** There seems little doubt that the current drive is for fixed guideway systems to bridge the gap between buses and rail transit systems. The head of Rohr's transporation group recently defined personal rapid transit (or PRT) as "a grade separated fixed guideway system with off-line stations, having vehicles carrying four to six passengers operated under a complete fail-safe automatic control system on demand from origin to destination."

As opposed to the "batch process" for moving people where the stations are on-line, the off-line station permits vehicles to wait for people instead of the way it has traditionally been done. Acceleration and deceleration of the vehicles can also take place on the station bypass tracks. The small vehicles are said to make possible guideways which can be lightweight, low cost and aesthetically pleasing.

The next level, that presently offered by Transit Expressway and Airtrans, is the system operated on a batch process with vehicles carrying probably more than a dozen passengers and operating singly or in trains between on-line stations. Switching is possible so a diversity of routes may be offered.

UMTA would aim to reduce the headway between PRT vehicles, minimize guideway costs and, by so doing, achieve passenger-per-hour investment comparable with that offered by intermediate Transit Expressway or by a conventional steel-on-steel system. All this would be a technological quantum jump, but even UMTA researchers concede that it is "technologically ambitious."

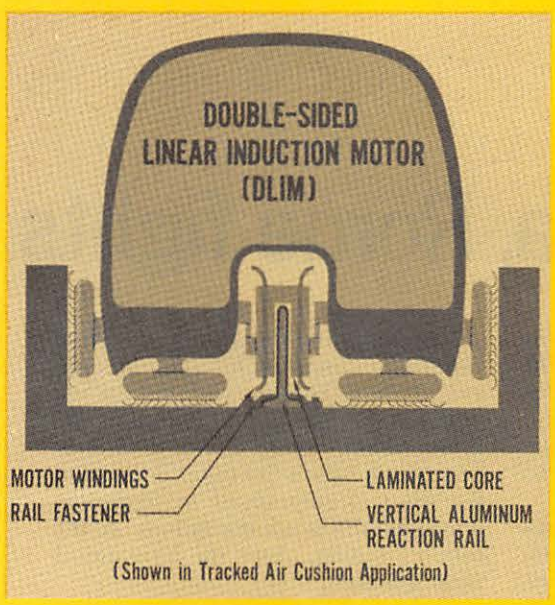


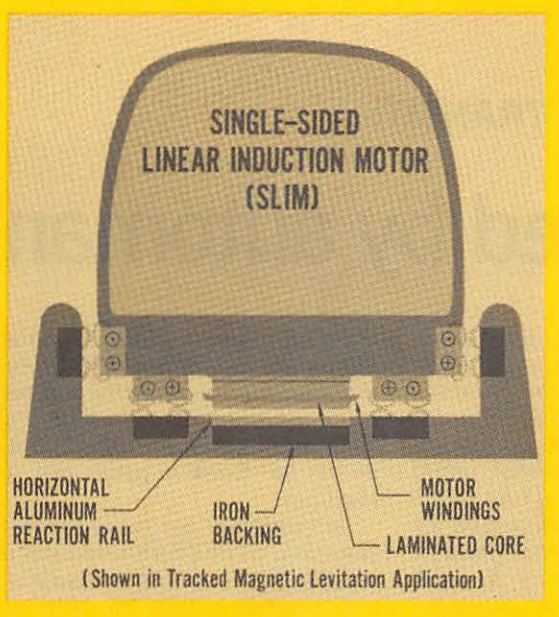
PRT, like intercity systems, might not be wheeled. Krauss-Maffei and Messerschmitt have been developing attraction-type urban maglev systems and Siemens is involved in a repulsion-supported maglev development.

KM has a $16 million contact with the Province of Ontario for a 2.5-mile PRT maglev demonstration to be installed at the grounds of the Canadian National Exposition in Toronto. The vehicles may be assembled in trains to increase system capacity when necessary. ■

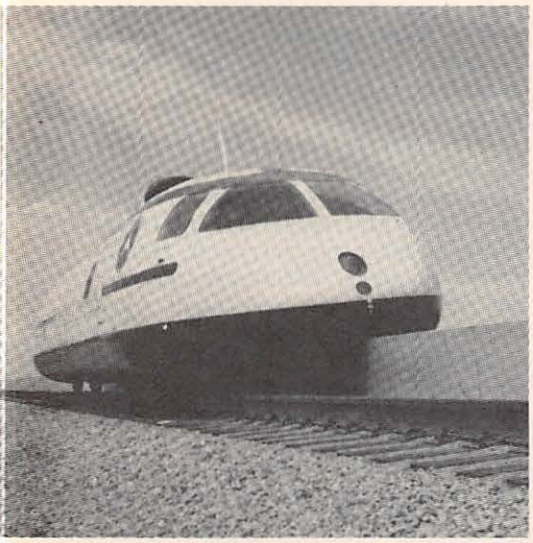
UTACV, recently completed by Rhor for UMTA, is based on firm's license by France's Bertin Aerotrain.

TRANS–URBAN, maglev of Krauss Maffei, will be demonstrated on loop at Toronto's Canadian National Exposition.

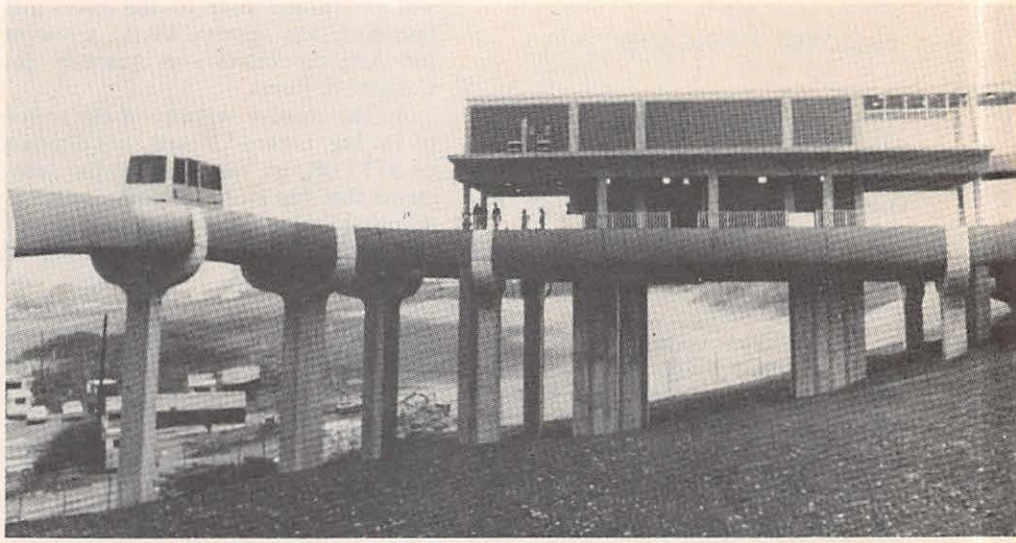




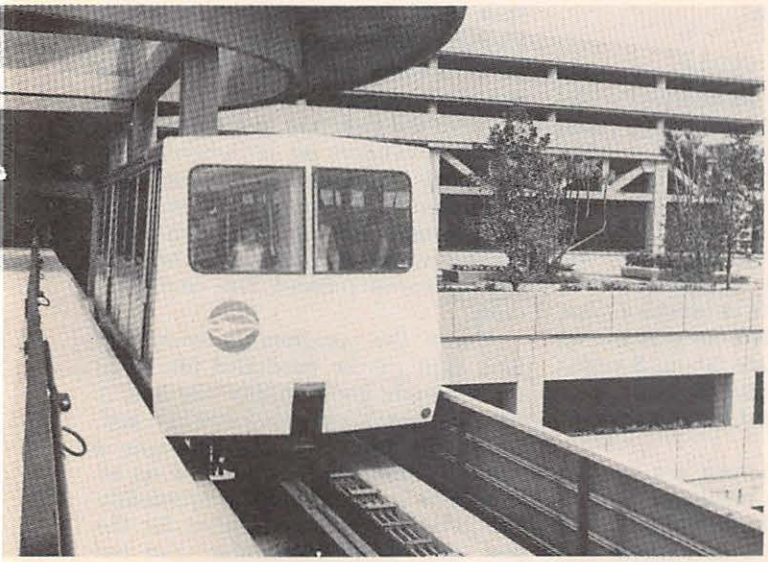
PROPULSION RESEARCH by DOT is progressing from conventional rotary motors and steel-on-steel adhesion (far left) to the DLIM is used also on UTACV prototype, the application shown (center). FRA will seek funds for eventual test of SLIM on steel-wheel LIMRV, although it is shown on magnetically levitated vehicle (right) and would also be usable on an air-cushion system.



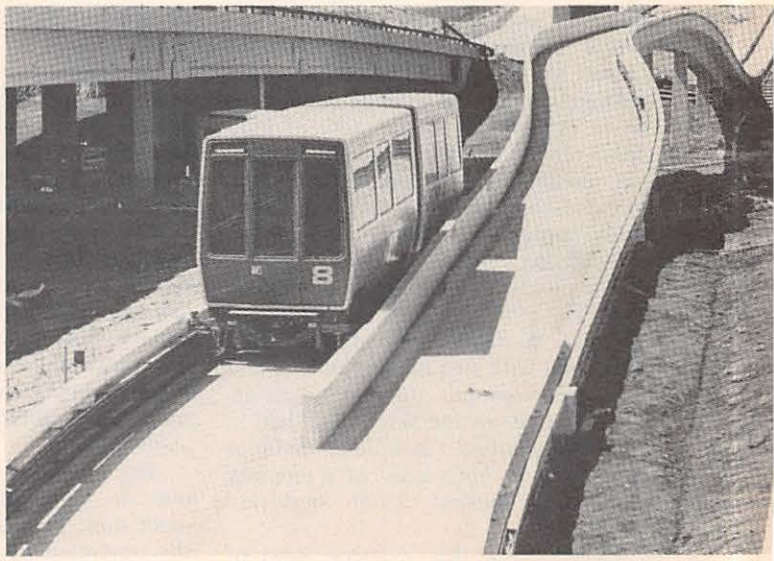
LIMRV has already been propelled at 191 mph and new jet boosters are to make possible higher speed testing.



MORGANTOWN PRT, UMTA's $63 million connector between West Virginia University's three campuses, has 2¼ miles of elevated guideway and three stations. There have been numerous congressional critics of cost; UMTA cites R&D nature of project.



TRANSIT EXPRESSWAY of Westinghouse has two in-service airport installations: Tampa (above) and Seattle/Tacoma.



AIRTRANS has been put in at new Dallas/Fort Worth airport by LTV. It will move passengers, baggage, mail.

THE WORLD IN TRANSIT:

Paralyzed by automania, Rome fights

Two thousand years ago, Julius Caesar banned carts and chariots from the center of Rome. In the following article, the director of public affairs for New York's Metropolitan Transportation Authority, who recently visited Rome, describes the Eternal City's newest efforts to come to grips with an age-old problem. It is the first in a series of articles in which Railway Age will explore the steps which cities around the world are taking to cope with a problem common to all: the suffocating ubiquitousness of the automobile.

By SIDNEY J. FRIGAND

"Tutte le strade conducono a Roma."

"All roads lead to Rome" may have been a figurative expression of civic pride when it was first popularized in Latin proverbs two millenia ago. But when my car plunged into a roaring river of Fiats on Via Ostiense, I had no doubt about the literal interpretation of that prophetic phrase as well.

The Roman rush hour is a phenomenon quite unlike any other. New York's is a patient chain-gang of moaning, broadshouldered bullies shuffling relentlessly through town; London's oozes serpentlike amid hisses, hums and snarls; Paris features an hysterical stampede of trumpeting little beasts.

But Rome! Each street looks as if it is the victim of a bad fall of shiny dominoes which somehow have come to life and lurch about in random spastic starts that resemble teeming bacteria squirming under a microscope.

The manic-depressive rhythms of Roman *traffico* reach full orchestration during morning and evening rush hours as we experience furious acts of individual driving bravado amid the bedlam and cacaphony of squealing horns, lyrical oaths and sputtering exhausts—which appear to be the Roman version of the Bronx cheer.

The morning "rush" is further aggravated by a totally anarchical parking spectacle. A street 150 feet wide often finds itself with two moving lanes as our little dominoes pile up in random accretions—first on the sidewalks, then in the safety zones, then in double or triple tiers on both sides of a one-way street—until almost total occlusion occurs.

Experiencing this extreme form of "arterial sclerosis" was proper prelude to my morning visit to the offices of STEFER (Societe Tramvie e Ferrovie Elettoriche di Roma). STEFER has the responsibility for operating and developing a rail rapid transit system which is designed to provide a viable travel alternative to Rome's latter day Circus Maximus.

In addition to the Metropolitana (subway), STEFER also operates streetcar lines, urban and interurban bus lines, and commuter lines to Lido and to Fluggi-Alatri. Under a recent reorganization agreement, however, all of the urban surface lines—bus and streetcar—will be turned over to the municipal transportation agency, ATAC, acronym for Azienda Tramvie e Autobus del Comune di Roma.

In the relative serenity of the office of Dr. Ing. Lorenzo Rosati, vice director of STEFER, we talked about the automania that has afflicted Rome, as it has all other major metropolitan centers of the world. There are differences, of course. In Rome, for example, the laissez-faire traffic patterns are exacerbated by a relatively small municipal police force to enforce traffic ordinances; by wrist-slapping penalties for illegal parking (1,000 lire—about $1.75, which isn't very much more than the Roman pays for a gallon of gas); by the geography of the ancient city with its vast piazzas and grand avenues funneling into narrow winding streets; and by the fierce independence of the motorist who gallops into battle each day in total defiance of local laws—or laws of physics for that matter.

A familiar dilemma

The problems of providing a viable mass transportation alternative to the private motor vehicle are pretty much the same in Rome as they are in urban America. The subject of financing became the immediate target of attention.

"To begin with, we have a very low political fare," Dr. Rosati said. He recognized the need to keep the fares low to accommodate a working class society, but he pointed out that the 50 lire transit and bus fare (about 8 cents) requires heavy subsidy to make ends meet. The real trip cost, he explained, is about 170 lire.

The operating dilemma is a familiar one. In Rome, the municipal government must bear the burden of financing the operation of the buses, trams, and the six miles of Metropolitana which has been in operation since 1955. The state or regional government provides funds for the assistance of the suburban bus and rail lines. The municipal income last year was 400 billion lire. Its deficit was 2,400 billion lire. And, with the exception of a 5 billion lire token grant from the national government to Rome for providing the accommodations as the nation's capital, there are no national funds available.

Despite the financial strictures affecting mass transit operations, the transportation officials of Rome feel that the need to lure the public onto mass transportation is strong enough—and the traffic situation on the streets is desperate enough—to warrant experimentation with fares and with traffic restrictions.

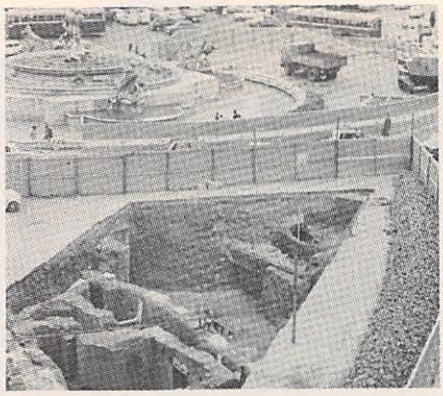
While transportation officials in the rest of the world watched, Rome boldly proclaimed a free fare during Christmas week 1971. The results were too inconclusive to make any judgments. Patronage on the public facilities was heavier, but not during the peak hours when auto traffic was at its worst.

And so, again in July of 1972, a somewhat revised experiment was launched. This time, the no-fare policy was in effect from 7 to 9 a.m. and from 5 to 8 p.m., thus seeking to dramatize peak hour opportunities to leave the old Fiat at home. The results, according to the experts, were *"negativo."* Buses, trams and subway trains—already near saturation during rush hours—had little in the way of extra capacity. More importantly, Rome's indomitable *automobilisti* were not going to be denied their daily joust on the streets of the Eternal City by the prospects of saving a 16 cent round-trip fare on a crowded public conveyance.

After the two free fare trials, transportation officials are no longer thinking about that approach as a means to encourage mass transportation usage or to discourage the motorist. The new experiment—in operation since July 15, 1972—involves reduced fare commuter cards.

Under this program, a commuter flash card can be purchased for 1,000 lire a month, good on any one line. A two-line monthly card is 2,000 lire, and, for 3,000 lire, one can purchase a monthly card which is honored on all lines. The commuter card is apparently well received. It is convenient for the passenger, it is transferable, and has even become popular with hotels which buy them for their guests.

back–and digs



WHEN IN ROME, foreign drivers do as the Romans do: they panic. To fight congestion, Rome is (1) banning autos from part of the city center, and (2) digging rail transit lines, a task sometimes complicated by archeological finds which must be skirted (left).

What this innovation has not done is bring money into the operating agencies—or discourage auto traffic. According to STEFER officials, revenues are down considerably since the institution of the new service, but the costs of operation continue to mount.

On the streets, there has been no visible effect on traffic.

And so, still another Roman experiment is in the offing: this time, it is planned to close a section of the historical center of Rome to auto traffic. There has existed for some time a plan to close the old city of Rome—bounded by the ancient Aurelian walls—to daytime itinerant traffic. This sector of the city, which also serves as the governmental center, runs eastward from the Tiber to the Muro Torto in the Villa Medici and Villa Borghese area. It runs southward from the Piazza del Popolo to Piazza Barbarini and Piazza Venezia.

Highway out, subway in

But even the first experimental closing has met severe difficulties, Despite some local enthusiasm for the enforcement of more restrictive traffic laws, at least for purposes of evaluation, neither the national nor state officials were very warm to the idea. Although there have been adequate assurances that residents will be permitted to use their autos in these restricted areas during the forbidden weekday hours, there is great political restiveness. The first such area is cheek by jowl with the Quirinale (Italy's "White House") and several other important national governmental complexes.

The influential Roman news daily, *Il Messagero*, commenting on the tug-of-war between the technicians and the politicians, was typically phlegmatic about this "most revolutionary" measure:

"To prohibit is not enough," concluded *Il Messagero*, "It is necessary to plan and to build."

In this respect, Rome has moved out of the experimental state into the real world of heavy construction. After abandoning plans for a major north-south expressway on the eastern side of the City because of costs involved, excessive dislocation of properties, and public and political resistance, the City is actively engaged in the development of nine miles of new subway line to augment the six-mile existing system.

The new line, known as Linea A, will ultimately run from the Vatican, across the Tiber, through the Old City, connect with existing Linea B at Stazione Termini, and then continue southeasterly to Osteria Del Curato which is just short of the circumferential connecting highway that girdles greater Rome.

Estimated in pre-inflationary days to cost some $250 million, Linea A is probably the most ambitious single transportation undertaking in Rome–since the fourth century B.C. when the Censor Appius lent his name to the world's most renowned road.

Work on the new route began in 1969 after a decade of planning and delays. Financing of the design and construction of the right-of-way, terminals and stations, has been undertaken by the State Government. A more recent commitment for signals, track and rolling stock has been approved by the municipal government.

Skirting ancient ruins

Initial construction on the project started as early as 1963, but came to an abrupt halt when important archeological treasures were uncovered. Significant portions of an ancient Etruscan fortification, the Servian Wall—the oldest wall of Rome dating back to the period between the Fourth and Sixth Centuries B.C.—were unearthed near the railway station (Stazione Termini). Other priceless finds, relics of the Diocletian Baths, were discovered in nearby Piazza della Repubblica, requiring a shifting of subway route and costly redesign.

Dr. Rosati explained that there is now a newly-worked-out agreement with the all-powerful Commission of Fine Arts, to prevent months and years of delays. Decisions on archeological finds are now resolved within a matter of hours, he said, so that the contractor—a firm known as SACOP—can move ahead with some semblance of a work schedule.

Present plans call for completion of the first contract section (from Stazione Termini to Stazione Osteria del Curato) in 1977 or early 1978. This first trunk of the new line, about 6.2 miles in length, has most of the tunnelling and surface right-of-way work completed.

The at-grade section has track and stations completed, awaiting signals and station interior work. The tunnel section, which is about 2.5 miles long, has two key interchange stations three years from completion.

Running northwest of the Stazione Termini is the second trunk of Linea A which is also under contract. This leg of the new line will be tunnelled as far as the Tiber, where it crosses the river over a pre-stressed concrete auto-rail bridge which is virtually completed. Once across the river, the underground will be completed by cut-and-cover methods in the flat alluvial deposits that characterize the sub-soil on the west bank of the Tiber.

Plans are already being worked out for the rolling stock, which will be—like the cars in current use—of functional design, employing steel wheels on steel rail. The practical STEFER planners will probably stick to a standardized rail car.

The Metropolitana cars operate in "married pair" units which get their 1,500 DC volt power from overhead pantographs. Operating in six-car consists, the trains can attain 50 mph speed and cruise at an average speed of 25 mph per hour.

Each train, which can carry upwards of 1,200 passengers per trip, can theoretically remove a quarter of a mile of autos from the Roman roads each day. Whether indeed, the new, expanded Metropolitana will succeed where other experiments have failed, remains to be seen.

One thing is clear, however. There is a very real aura of confidence radiating among STEFER's planners and engineers. They are no longer saying "if" the line is completed, but rather "when." ■

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Chicago transit: Not a hand, but a handout

In Illinois, politics doesn't just make for strange bedfellows—sometimes it makes for something that might best be described as musical beds. Case in point: The maneuverings during the recent session of the legislature regarding creation of a Regional Transportation Authority for the six-county Chicago metropolitan area. After all was said and done, after the gavel fell the last time until October, RTA lay in the dormant file and the financially-troubled Chicago Transit Authority came out with a stopgap handout that will help some, but not a lot.

What happened, as near as anybody can determine, is that the RTA idea got caught in one of those political crossfire situations in which positive action didn't stand a chance—not with one politician describing another's plan as "incoherent" and with the second politician describing the first's behavior as "bizarre," and not with Republican legislative leadership and Chicago-area (mostly Democrat) politicians and an "independent" governor and downstate pols of all descriptions all mixed up in one large brouhaha. Under the circumstances, RTA had to come up a loser—and it's probably a near-miracle that even CTA eventually came out with something.

What CTA will get, apparently, is a $12-million state grant, a $27-million advance from the state on reimbursement for reduced student and senior-citizen fares and $8.5 million from Chicago and Cook County. Chicago Transit Board Chairman MIlton Pikarsky said he was "grateful" for this aid and, in view of the promised help, CTA did back off from a good part of the service-cutting which would have occurred if help had not been forthcoming. At the same time, Pikarsky made this point: "Let us not forget that time is running out. The governor and the state legislature must not relax their efforts in funding a permanent solution to the financial crisis being faced by CTA."

● **Something—and nothing.** What the six railroads and the dozen-and-a-half bus companies providing commuter-type service got is nothing. But, a foundation for a regional transportation authority has been laid. And, hope lives on that something toward putting it together can be accomplished before the end of the year, after the legislature gets back to work in October.

Actually, a transportation authority bill did get through the legislature in the final hours as the law-makers were rushing toward summer adjournment. But its provisions were such as to encourage even greater fragmentation of effort and operation—the opposite of what the commuter railroads had been urging and the opposite of what the legislature, presumably, had been working on.

In the meantime, the railroads themselves seemed to be finding that maintaining a united front was not always the easiest thing to do—not with profit/loss situations varying, not with some roads better able to "eat" losses than others, not with some but not all getting capital-money aid via the transit-district route, not with opinions reportedly differing on the question of mass-transportation control and ownership and operation by a unified central agency vs provision of service on some kind of contract basis.

Regional-authority proposal languishes as haggling politicians offer stopgap aid

Any problems with the so-called railroad position, however, were dwarfed by the political problems—and by political maneuverings that were bewildering if not inexplicable. This is what seemed to be taking place:

As the legislature ground its way toward adjournment in late June, it became increasingly clear that it would take a miracle to put meaningful legislation on the books—with a lot of the political infighting centering on the question of financing an RTA. The most prominent legislative proposal would have based funding on state sales tax revenue, taking a half-cent from taxes paid in the six-county area and earmarking it for mass transportation. From the Administration, however, came talk of levying a utility tax—and then talk of creating an RTA without final funding, pending study by a commission to determine how the finances should be handled. (Some observers pointed out that much of this kind of work had already been done this year by a special Illinois Transportation Study Commission.)

● **Compromise?** At one point, legislative leaders indicated a compromise had been reached—one that would include taxes on utilities, gasoline and parking, a sales-tax switch and a subsidy from Chicago. But, it was reported, the governor rejected that plan.

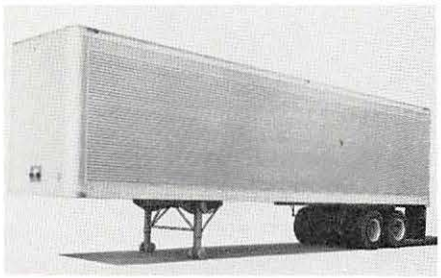
Finally, the legislature adjourned—after passing only an obscure bill which would allow formation of transit districts through a vote of individual government agencies within the districts and which would permit funding from property taxes. It passed and the governor signed it, even though few people had much good to say for it.

Then, with the legislature gone from Springfield, the maneuverings became almost too fast for the eye to follow. With cutoff of emergency aid at the end of June (RA, April 9, p. 15), CTA began preparing for extensive service cutbacks. The governor was quoted as saying the state had no money for CTA. Some politicians talked of calling a special legislative session, but that bandwagon never got rolling. And, as if CTA didn't have enough other problems, its metal-trades employees called a strike—but later postponed it. Service cuts were announced, and CTA riders were warned that another fare increase (from the current 45 cents) might be needed.

In the meantime, various governmental agencies continued to look around for money. Chicago city council approved $6.5 million for CTA, the Cook County board chipped in $2 million. The governor said the state would advance $7.2 million as prepayment of subsidies paid to systems which carry students and senior citizens at lower-than-standard fares. He later proposed $12 million more in emergency funding for CTA—and ran into heated opposition from legislative leaders, who called the offer a "subterfuge of the legislative process."

At about the same time, key figures in the affair decided that a summit conference might be in order—involving legislative leaders of both parties, Chicago Mayor Richard J. Daley and Gov. Daniel Walker. The meeting finally came off—but without the governor, who declined to attend and, in fact, was out of the state on the day legislators and the mayor got together. ■

New Products Report



Trailers get built-in custom requirements on production line

The first two in a series of new van trailers have been announced by Highway Manufacturing Co. The Models 901 and 902 straight frame dry freight vans are offered as standard models and specials, the latter a part of the maker's new concept of building in special door positions and other custom requirements on the production line. Integral production line installation is available for curbside doors, roadside doors, scuff liners, skylights, vent doors, special floors or other customer needs usually installed at service locations after the trailer is made. The company based its concept on research which revealed that body changes made after the trailer is completed can weaken the structure and void new trailer warranties.

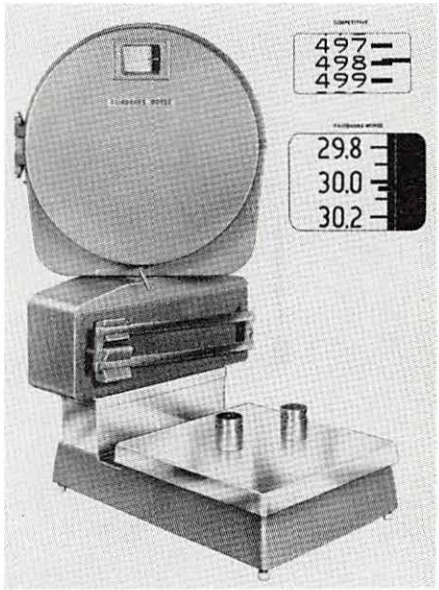
Circle 60 on reader service card

New radio can withstand severe railroad operating conditions

A compact, modular, two-way railroad radio introduced by WABCO's Union Switch & Signal Division occupies 46% less space and is 39% lighter than previously available sets. Power supplies have been designed for use in locomotives, cabooses, urban transit cars, base stations, business automobiles and trucks and M/W vehicles. Rugged construction and circuit design isolates sensitive components from severe railroad operating conditions. Servicing is done easily and inexpensively because of the modular design. If a part needs replacing, the entire module housing the affected part is quickly and simply replaced with a new one.

This 4R series radio can be operated with up to 12 channels. Easy conversion is achieved in the field by adding plug-in modules. Broadband design allows operation to full specifications on any channel spread within the railroad band. No retuning is required to change channel frequencies within the railroad band. Transmitter-receiver and power supplies are interchangeable with WABCO's earlier 3R series equipment. The 4R unit, including mounting base plate, is 3.69 in. high, 10.63 in. wide and 16.13 in. long. Rated power output is 40 watts.

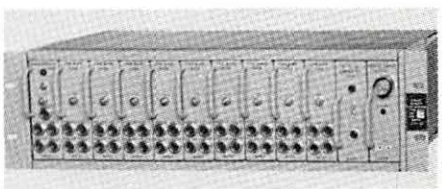
Circle 61 on reader service card



Dial scale accessory gives readability at a distance

The projection indication accessory for Fairbanks Morse dial scales features 5/8-in.-high numerals visible at normal plant illumination for distances up to 30 feet. Projection indication is available on many FM scales, including the exclusive Premium Blue and Flexway models. The accessory provides projected readout capability for standard mechanical bench dial scales. The indicating assembly is a rotating disc chart actuated by the scale's platform lever system. The chart indication is highly magnified and projected to the readout window, providing the 5/8-in.-high numerals. An illuminated readout window is standard.

Circle 62 on reader sercice card



Bridging unit controls base radio stations

Type 6022 remote bridging multiple provides for the remote control of a radio base station by several subscribers over a 2-wire facility. This Bayly En-

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gineering equipment is designed to provide a controlled line signal level from up to 9 subscriber loops. When a subscriber is off-hook, all other subscribers are receiving on all system traffic.

The equipment includes test points for radio line and loop adjustments. The standard dc radio control output can be extended for use on carrier or non-dc systems by optional tone interface equipment.

Circle 63 on reader service card

Optical reader works with an electric typewriter

The Datatype Corp. optical reader permits data entry via an IBM Selectric typewriter, utilizing a special print element which "types" the normal "people readable" alphanumeric characters along with a "machine readable" bar code to activate the scanner.

The system incorporates a two-way communications module in the logic. This allows the scanner to operate remotely, under control of the receiving controller or computer. Features of this communications module include: Automatic call-up; start and stop transmission; and activation of a re-scan cycle when transmitting errors are detected. The DFR-300 reader incorporates a parity checkbit which virtually eliminates character substitution possibilities. It directly "plugs-in" to most computer communication channels. The system will operate over voice grade lines.

Circle 64 on reader service card

Plastic liner cuts damage to cargo and its containers

Damage to trailer and cargo can be reduced appreciably by using Scuffliner, a specially formulated fiberglass liner made by Kux Manufacturing Co. Made of high-impact, shatterproof plastic, the liner withstands high abrasion, resists most chemicals, is dimensionally stable and provides long service with minimum maintenance. Scuffliner comes in large rolls and full-length sheets. Hence, it can be installed to provide a virtually seamless surface with fewer joints to seal and practically no edges and protrusions to catch cargo. It can be cut with ordinary power or hand tools and mounted with countersunk rivets. The tough, glazed surface meets all sanitation standards and repels soils and staining. When it does need cleaning, steam or an ordinary detergent solution will do the job.

Ideal for use in the presence of heat and cold, Scuffliner expands and contracts in an amount similar to that of steel and aluminum. This makes it practical for freight cars, refrigerated containers and trailers made of those metals. Accepted by the U.S. Department of Agriculture, it can be used in vehicles hauling meat, poultry, frozen foods and other foodstuffs. It meets all Federal flammability standards.

Circle 65 on reader service card

Battery capacity is being doubled

Alcad nickel-cadmium batteries have been doubled in capacity with the DLS range now extended to 900 ampere hours and the RV type extended to 1040 AH. Cells are in steel containers. The RV type features a double-plate construction insuring long operating life. Peak currents up to 1,380 amps can be produced. Chloride Systems (USA) says these cells can be used for a wide variety of standby power applications in new or existing equipment.

Circle 66 on reader service card

Sealer restores aged aluminum surfaces

A wash-on sealer has been formulated for anodized and weathered aluminum surfaces by Coricone Corp. The sealer instantly penetrates and fills the porous oxide film of an anodized finish to prevent corrosion caused by salt, condensation and temperature variations. It can be applied by dipping, brushing or spraying. On weathered anodized surfaces such as transit cars, Coricone 1200 Anodizing Sealer is easily applied. The surface is touch-dry in one minute and then invisible protected for years.

Circle 67 on reader service card

New stability assured by curtain dispensing

Rigid, cellular urethane panels and molded products can now be produced with improved dimensional stability and at a faster rate though a new curtain dispensing process developed by Kornylak Corp. The deposition of metered and mixed chemicals is completed over the full width of the product in a single pass. Faster reaction also minimizes the soaking of the liquid into porous substrates. The stability of the product, using the same basic materials, is substantially improved because of the speed of application. The process can be licensed for existing production lines. Applications include foam-cored panels with flexible or rigid skins, rigid slabs, free-rise coating of corrugated or irregular panels, foam application to porous materials such as glass fiber mats or woven fiber, and the filling of spaces such as in doors and refrigerated cars or trailers.

Circle 68 on reader service card

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Railway Age

CHICAGO & EASTERN ILLINOIS.—**Joseph A. Austin,** vice president-traffic, **Missouri Pacific-Texas & Pacific,** also elected to the same position on the **C&EI.** Mr. Austin, who will have his headquarters at St. Louis, succeeds **William Peake,** named general sales manager, Western and Pacific Regions, **MP,** St. Louis. **George A. Craig,** assistant vice president-sales and service, **MP-T&P,** also named to the same position on the **C&EI,** with headquarters at St. Louis.

ILLINOIS CENTRAL GULF.—**James N. Ogden,** vice president and general counsel, named vice president-law. **Percy W. Johnston, Jr.,** general solicitor, appointed general counsel. **Howard D. Koontz,** general solicitor, named senior general solicitor.

Christopher W. Damiano, superintendent, Memphis Terminal division, Memphis, Tenn., transferred to the Louisiana division, New Orleans, to succeed **Frank J. Duggan,** elected president, **Peoria & Pekin Union.** Mr. Damiano's successor is **William G. Bumpus. Narvell Strickland,** sales manager, Gulf region, New Orleans, transferred to New York, to replace **George L. Stern,** named general manager-intermodel services, Chicago (RA, June 25, p. 60). **Richard L. Rushing** transferred from the Southern region, Memphis, to succeed Mr. Strickland, and in turn is succeeded by **David L. Gruenewald,** area sales manager, Detroit.

MISSOURI PACIFIC-TEXAS & PACIFIC.—**W.H. Peake** named general sales manager, Western and Pacific Regions, St. Louis.

NORFOLK & WESTERN.—**Jean Jones,** assistant vice president-budget and planning, Roanoke, elected vice president, Management Information Department, Roanoke, succeeding **I.H. Soldwish,** who retired July 31.

PEORIA & PEKIN UNION.—**Francis J. Duggan** appointed president, general manager and a director, to succeed **Phillip M. Galloway,** retired. Mr. Duggan was formerly superintendent, Louisiana division, **Illinois Central Gulf,** New Orleans. **Charles R. Hellums,** formerly assistant director-field operations, **ICG,** named secretary-treasurer and general auditor, **P&PU.**

READING TRANSPORTATION CO.—**John M. Patterson,** general manager, promoted to vice president and general manager, Philadelphia.

SANTA FE.—**Donald G. Ruegg,** general manager, Los Angeles, appointed assistant vice president-operations, Chicago. **J.R. Fitzgerald,** assistant general manager, Amarillo, Tex., and **T.D. Mason,** assistant chief mechanical officer, Topeka, Kans., named assistants to vice president-operations, Chicago.

Don G. Thompson, district sales manager, San Francisco, promoted to the newly created position of district sales manager, Honolulu. **Robert Rhodes,** traffic analyst, San Francisco, succeeds Mr. Thompson.

SOUTHERN FREIGHT ASSN.—On June 1 assumed jurisdiction of the Research Bureau, **Association of Southeastern Railroads.** The SFA Research Department will continue in its present location at American Railroads Building, 1920 "L" Street, N.W., Washington, D.C. 20036. **Eugene W. Burroughs, Jr.,** is manager, SFA Research Department, and **Hartley W. Hird, Jr.,** is assistant manager. Mr. Burroughs is also secretary, Association of Southeastern Railroads.

TRANS-CONTINENTAL FREIGHT BUREAU.—**Richard E. Altgilbers** named chairman, to succeed **Russell W. Talbot,** who retired June 30. Mr. Altgilbers was formerly assistant chairman, **Executive Committee-Western Railroad Traffic Assn.**

WESTERN MARYLAND.—**Edward P. Ryan** appointed assistant manager, foreign commerce, New York, succeeding **Leon Utterback.**

WESTERN PACIFIC.—**Walter G. Treanor,** corporate secretary, elected vice president-law, to succeed **E.L. Van Dellen,** who retired July 1.

Frederick J. Beier named market manager for bulk materials and **John E. Sanftner** appointed market manager for metals, machinery, and transportation equipment. Both will have headquarters at San Francisco.

WESTERN RAILROAD ASSN.—**Robert H. Lindsay** appointed assistant to the president-finance and information. Mr. Lindsay was previously director of the data services division and tariff publishing officer, **Western Trunk Line/Trans-Continental** joint freight tariff bureau. He is succeeded in the WTL/TCFB position by **Earl A. McCarron.**

SUPPLY TRADE

Richard M.M. McConnell will become Washington editor of **Railway Age** effective Aug. 15, succeeding **Reid Beddow.** McConnell, who earned an A.B. degree in philosophy at St. Paul's College, Washington, and an M.A. degree in American studies at the University of Maryland, worked for three years as a wire-service reporter in Washington and was subsequently a writer for the American Bankers Association and associate editor of the National League Journal. He has also written for the World Book Encyclopedia and Compton's Encyclopedia. He resides in Takoma Park, Md.

W.D. Reuter, general sales manager-railroad products, **Buckeye Steel Castings,** has been advanced to vice president-railroad sales, to succeed **George T. Johnson, Jr.,** retired.

Thomas P. Marple, senior engineer-mass transit sales, **Westinghouse Air Brake Division, WABCO,** has been appointed assistant to the vice president-railroads and rapid transit systems sales, **Okonite Co.,** Ramsey, N.J.

Herbert N. Bush, manager-marketing distribution and service, **Okonite Co.,** has been appointed director-marketing distribution and service. **Donald C. Huber,** manager-advertising and public relations, has been named director-advertising and public relations. **William R. Watson, Jr.** appointed sales representative, Charlotte (N.C.) district. **Larry R. Kelly** named sales representative-Houston district.

Douglas G.K. Wilmot has been appointed general manager and **Keith L. Jackson,** director of engineering, **GSI Engineering Division, General Steel Industries, Inc.** Mr. Wilmot was formerly vice president, engineering and Mr. Jackson, chief engineer, design, **GSI's Castings Division** plant, Granite City, Ill.

Paul W. Campbell has been named to the newly created position of manager-rail car leasing, **Union Tank Car Co. Bruce J. Fischer** has been appointed midwest district sales manager, Chicago.

John A. Diamond has been named manager of car systems engineering, **Transportation Systems Division, Vapor Corp.** He was formerly manager, Commercial Products Design Department, **Link Division, The Singer Co.,** Binghamton, N.Y.

Kerry E. Stokes has been named central sales manager, **Pullman Transport Leasing Co.,** Chicago. He was formerly sales engineer.

Robert B. Hio has been appointed district manager, Oakland, Cal., office, **General Railway Signal Co.,** succeeding **Thomas J. Judge,** who retired July 31. **Robert Morrison** has been appointed sales engineer, New York Office, succeeding Mr. Hio. Mr. Morrison was formerly general inspector, communications and signals, Metro Region, **Penn Central.**

The marketing and sales group, **Alco En-**

gines Division, White Industrial Power, Inc., has been reorganized into four major regional areas, each with its own administrative sales and service staff and part warehousing facilities. Domestic regional managers appointed: **J.J. McCarthy,** Eastern Region, North Bergen, N.J.; **C.H. Obrist,** Mid-Continent Region, St. Louis Mo.; **C.J. Elsner,** Southern Region, Houston, Tex.; and **R.E. Cooper,** Western Region, Los Angeles, Cal. **P.M. Legac** appointed international marketing and sales manager, Auburn, N.Y. **L.H. Flesher** named marketing manager-stationary and marine engines, Auburn.

Martin F. Maher, manager of product development, **Oakite Products, Inc.,** Berkeley Heights, N.J., has been elected vice president. **John P. Greze,** assistant technical director, has been promoted to technical director, replacing **Dr. Clarence Bremer,** retired.

C. Allen Smith has been promoted to manager, specialty chemicals, **Nalco Chemical Co.,** Chicago. He was formerly mid-west sales manager, Pulp & Paper Chemicals Group.

Thomas F. Parisi has been appointed manager, casting sales, **Dominion Foundries & Steel, Ltd.,** Hamilton, Ont., in addition to his responsibilities in railway specialty sales.

The Railroad Division, **Erico Products, Inc.,** Solon, Ohio, announced the following additions to the sales and technical staff: **Alton Lee,** formerly with the **Southern,** appointed to a field sales & service position, Southern District; **Elford L. Wall,** formerly with **Marquardt Industries,** appointed district sales manager, Western District; **William T. Goff,** formerly with **Union Switch & Signal,** appointed district sales manager, Midwestern district; **Wilson Smith,** formerly with Northern Electric, appointed Canadian sales representative; **Terence A. Spauling,** formerly with **General Railway Signal Co.,** appointed field engineer, sales & service.

Ernest F. Dourlet, executive vice president, **Dayco Corp.,** Dayton, Ohio, has been elected president and chief operating officer, succeeding **Richard J. Jacob,** chairman of the board, who remains chief executive officer.

TRANSIT

John P. Aurelius has been appointed manager of transit technology, **Metro Transit,** Seattle. He was formerly manager of systems technology, **Port Authority of Allegheny County,** Pittsburgh.

Eugene C. Lepp has been appointed manager, systems, rail rapid transit program, **Niagara Frontier Transportation Authority,** Buffalo, N.Y. Since 1967 Mr. Lepp has been with De Leuw, Cather & Co., general engineering consultants to the Washington Metropolitan Area Transit Authority, first as project engineer, train control and communications and more recently as railroad coordinator.

Deane N. Aboudara has been named the first permanent executive director of the newly formed **Transit Development Corp.,** Washington, D.C. Mr. Aboudara has been serving as manager, marketing-rail transit division, **Rohr Corp.,** Chula Vista, Calif.

William A. Wild has joined the staff of the **Denver Colo. Regional Transportation District** as a transportation planner to work with planning director **Ralph Jackson.** Mr. Wild was previously employed as a transportation specialist, U.S.Department of Transportation, Washington, D.C. **Miss Gayle B. Quick** has been named the third community affairs coordinator on the RTD staff.

David S. Preuninger has been promoted to manager, transit products, **Ohio Brass Co.,** Mansfield, Ohio. He had been technical representative, Mining & Transit Department.

Dr. Walter J. Hesse has joined **Rohr Industries, Inc.,** Chula Vista, Calif., as vice president, Advanced Transportation Systems Division. Dr. Hesse had been vice president, development and marketing, Ground Transportation Division, LTV Aerospace Corp.

OBITUARY

Joseph B. Maxson, 63, vice president, industrial sales division, **Dayco Corp.,** died June 19 in Springfield, Mo.

John Miles Russell, 64, former district manager, St. Louis Office, **General Railway Signal Co.,** died June 1 in St. Louis, Mo.

Lee H. Shils, 65, who retired in January as director of engineering and car design, **Thrall Car Manufacturing Co.,** Chicago Heights, Ill., died July 7 in De Kalb, Ill.

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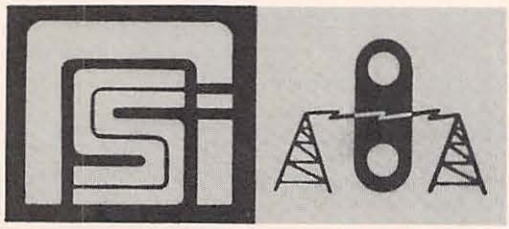

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Market Outlook

CARLOADINGS

Loadings of revenue freight in the week ended July 21 totaled 532,409 cars, according to the Association of American Railroads. This was an increase of 10,433 cars, or 2.0%, compared with the previous week, and an increase of 39,513 cars, or 8.0%, compared with the corresponding week last year. Ton-miles generated by carloadings in the week ended July 21 are estimated at 15.8 billion, an increase of 10.5% above the corresponding week of 1972.

REVENUE FREIGHT CARLOADINGS

Commodity	July 21 week	July 14 week
Grain	35,706	37,242
Farm products	8,880	10,122
Metallic ores	47,715	45,875
Coal	89,800	80,319
Crushed stone, gravel & sand	31,456	33,167
Nonmetallic minerals	15,605	16,781
Grain mill products	19,283	19,076
Food and kindred products	21,154	21,239
Primary forest products	24,387	24,911
Lumber & wood products (except furniture)	16,661	15,598
Pulp, paper & allied products	22,533	21,071
Chemicals & allied products	26,595	25,252
Petroleum products	9,567	9,323
Stone, clay & glass products	21,597	22,360
Coke	9,073	8,613
Metals & products	25,968	26,530
Motor vehicles & equipment	21,464	23,731
Waste & scrap materials	15,849	14,610
Forwarder & shipper assn. traffic	9,123	8,798
All other carloads	59,572	57,454
LCL traffic	421	445
Total cars loaded	**532,409**	**522,517**
Cumulative total, 29 weeks	1973	1972
	14,986,601	**14,155,316**
Estimated revenue ton-miles (billions) 29 weeks	460.8	425.0

PIGGYBACK LOADINGS

U.S. piggyback loadings for the week ended July 14 totaled 28,065 cars (13.3% above the corresponding week last year) and 48,931 trailers or containers (up 17.5% from 1972). Cumulative volume for the first 28 weeks of 1973 is 809,005 cars (up 17.9% from last year) and 1,396,506 trailers or containers (up 21.6% from 1972).

IN CANADA

7 days ending	Tons of Revenue Freight	Cumulative Totals
July 7, 1973	5,067,934	122,526,910
July 7, 1972	3,793,189	106,258,846

● *Burlington Northern.*—Ordered 400 100-ton, 4,000-cu-ft-capacity open-top triple-hopper cars from Greenville Steel Car for delivery beginning in February 1974.

● *Canadian National.*—Ordered 91 3,000-hp, 4-axle GP40-2 locomotives from the Diesel Division of General Motors of Canada at a cost of $34 million. Delivery is scheduled for next year.

● *Norfolk & Western.*—Ordered 11 diesel locomotive units from Electro-Motive at a cost of $3.7 million. Delivery is expected in September. The road will also acquire 439 89-ft, 4-in. flat cars and equip them with racks for movement of motor vehicles. Cost of the orders will be $13.9 million, with deliveries scheduled to be completed early in 1974. Pullman-Standard will build 291 cars, Bethlehem Steel 148 cars.

● *Union Pacific.*—Increased its 1973 new-equipment budget by $616,000 (to a total $101.6 million) to cover acquisition of 20 Airslide covered hopper cars and five 53-ft flat cars.

● *Freight-car orders and deliveries.*—The following report has been received from the AAR and ARCI:

DELIVERED

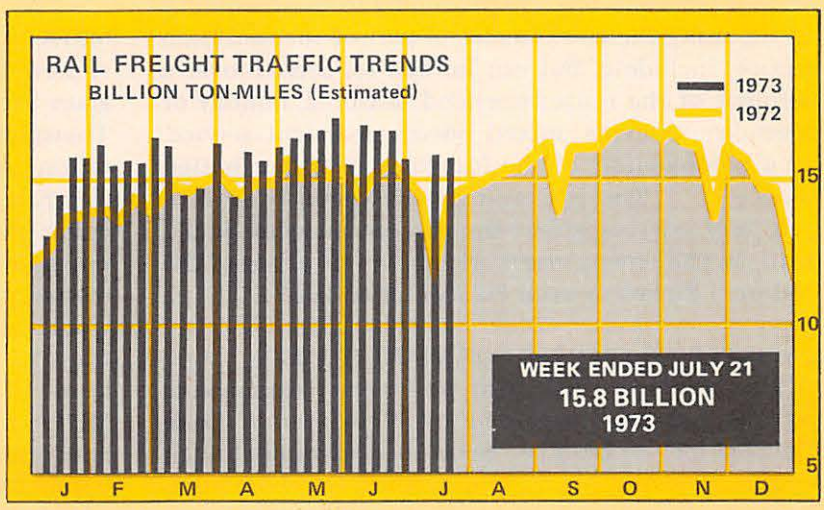
	June '73	May '73	June '72
Built new by carbuilders	4,414	4,390	3,705
Built new in R.R. shops	233	287	646
Built new—total	4,647	4,677	4,351
Rebuilt	39	71	118
TOTAL DELIVERED	**4,686**	**4,748**	**4,469**

ORDERED

To be built new by carbuilders	10,964	6,121	4,543
To be built new in R.R. shops	700	430	1,380
To be built new—total	11,664	6,551	5,923
To be rebuilt	—	-11	506
TOTAL ORDERED	**11,664**	**6,540**	**6,429**

ON ORDER AND UNDELIVERED

	July 1, '73	June 1, '73	July 1, '72
To be built new by carbuilders	41,600	35,624	11,921
To be built new in R.R. shops	2,869	2,403	5,015
To be built new—total	44,469	38,027	16,936
To be rebuilt	366	405	2,099
TOTAL ON ORDER	**44,835**	**38,432**	**19,035**



Source: Association of American Railroads

Moving People

TRUST FUND OPENED UP FOR TRANSIT

In a major victory for the Nixon Administration, and for mass-transit advocates, a House-Senate conference committee has agreed to permit limited monies from the Highway Trust Fund to be spent for transit. Breaking a long deadlock, the conferees agreed that $200 million in urban highway funds could be spent on buses in fiscal 1975, and up to $800 million of urban highway funds could be spent on either bus or rail systems commencing in fiscal 1976. The compromise came in the 28th meeting of the conference committee. The victory was not a total one for the transit advocates. The pro-transit Senate conferees were unable to get into the final version a provision which would have permitted a state to divert money from an interstate highway project to mass transit. It was agreed, instead, that a state cancelling a planned interstate highway project would have to return its highway funds and spend an equal amount of general revenues on transit. The Highway Action Coalition, which fought for diversion of trust funds to mass transportation, commented: "Although not enough dollars are made available for mass transit, we are encouraged by the opening up of the trust fund."

ICC BLOCKS AMTRAK DISCONTINUANCES

The ICC has ordered Amtrak to continue to operate, at least until Dec. 2, "The National Limited" between New York and Kansas City and "The Floridian" between Chicago and St. Petersburg/Miami. Amtrak had asked for discontinuance of the trains effective Aug. 1. A third abandonment request, involving service between Richmond, Va., and Newport News was rejected earlier because of improper filing. The ICC will conduct public hearings as part of an investigation that will touch on "all facts and matters pertaining to the feasibility of requiring the continuance in part of the said train service, including, but not limited to, service over a segment of the route; weekend, seasonal, holiday or special-run service, mixed passenger-freight service, or a combination of the foregoing or other limited service. . . ." The ICC said it also wants to investigate any adverse effect the discontinuances would have on the environment within the meaning of the National Environmental Policy Act of 1969.

ENGINEERING STARTED FOR MIAMI TRANSIT

A $2.4 million contract for preliminary engineering services has been awarded by Metropolitan Dade County for its 54-mile, $800 million rapid transit system covering Miami and surrounding communities. The 18-month project by Kaiser Engineers will involve specifications for the system, finalize station locations and right-of-way requirements, and develop a public information program to bring county residents into the decision-making process.

ONE OF AMTRAK'S TURBOS IS MISSING

One of United Aircraft's trouble-plagued Turbo-Trains, scheduled for delivery to Amtrak for service out of Chicago, was destroyed by fire after colliding with a Canadian National freight train during an acceptance run near Montreal on July 20. This $2 million train was one of two assembled for Amtrak from equipment built originally for service on the CN. United Aircraft of Canada leases three sets to CN and for the third time since 1968 CN attempted to begin Montreal-Toronto revenue service in late June. Lubrication and air conditioning malfunctions made it necessary to discontinue these Canadian Turbos after only a few days. Meanwhile, a pair of French turbine-powered trains (RA, Feb. 12, p. 16) were enroute to Chicago for midwestern service.

ROHR GETS FRENCH TURBO LICENSE

A license to build French turbine-powered passenger trains has been granted to Rohr Industries by ANF-Frangeco, a diversified French railway equipment manufacturer. Two of the five-car, 125-mph trains, built in France, are scheduled to enter U.S. service soon, being leased to Amtrak by ANF-Frangeco. After 18 months of testing Amtrak will have the option to purchase these trains, plus eight more. According to Rohr President Franch E. McCreery, if the French design is selected, Amtrak could require large numbers of such turbine-powered trains to replace older equipment. These trains would then be built by Rohr with engineering and technical assistance by ANF-Frangeco.

MBTA PRESENTS 5-YEAR PROGRAM

A new $1 billion, five-year capital expansion program has been submitted to the U.S. Department of Transportation by the Massachusetts Bay Transportation Authority. Connection, consolidation and electrification of Penn Central and Boston & Maine commuter lines is proposed so these routes can be integrated with existing MBTA transit lines. The master plan, based on a study by Thomas K. Dyer, would also involve the purchase of a new fleet of transit cars fitted for third-rail and catenary operation. UMTA has recently granted $50 million to MBTA for acquisition of B&M's 16.9-mile Reading line, purchase of 80 rapid transit cars, safety improvements for the existing subway system and new facilities on the existing streetcar lines.

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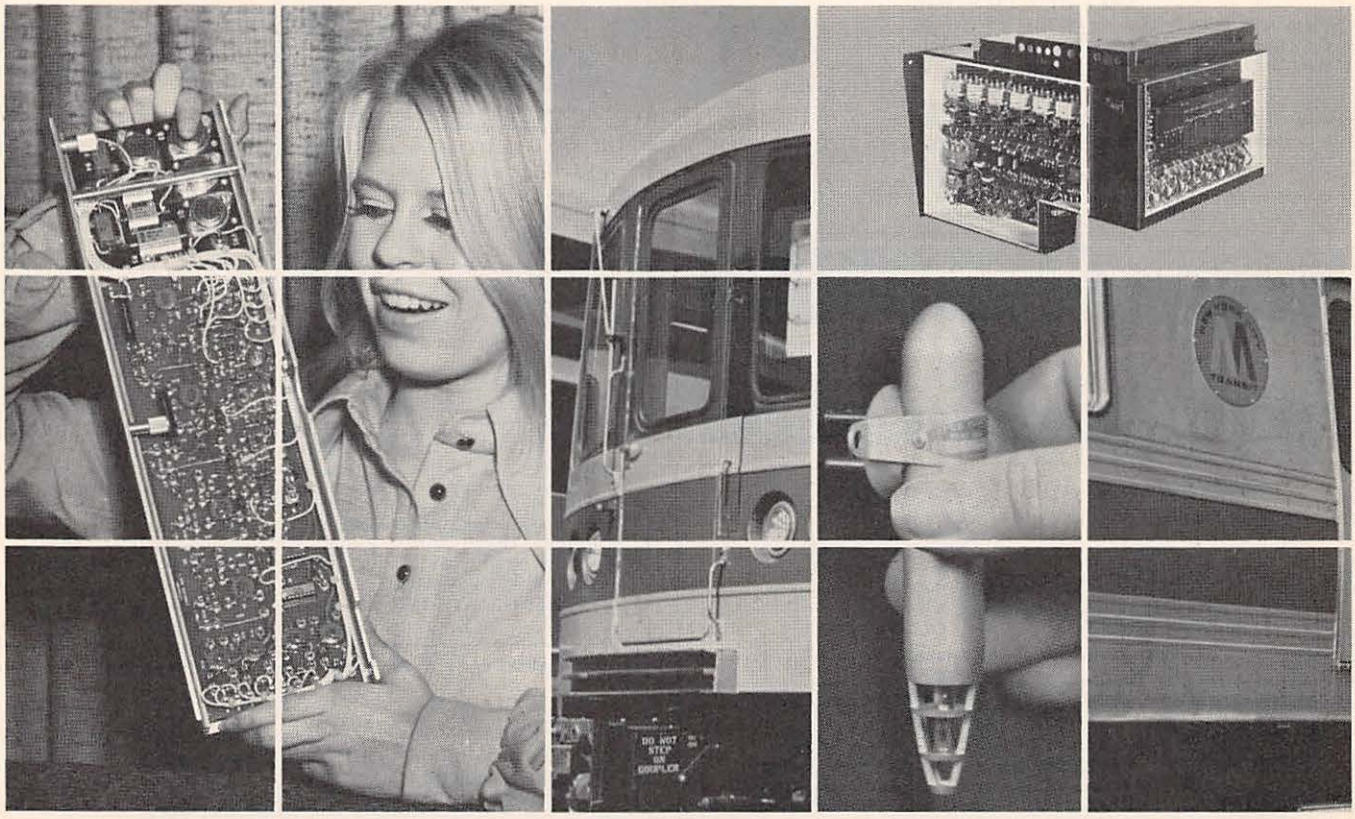

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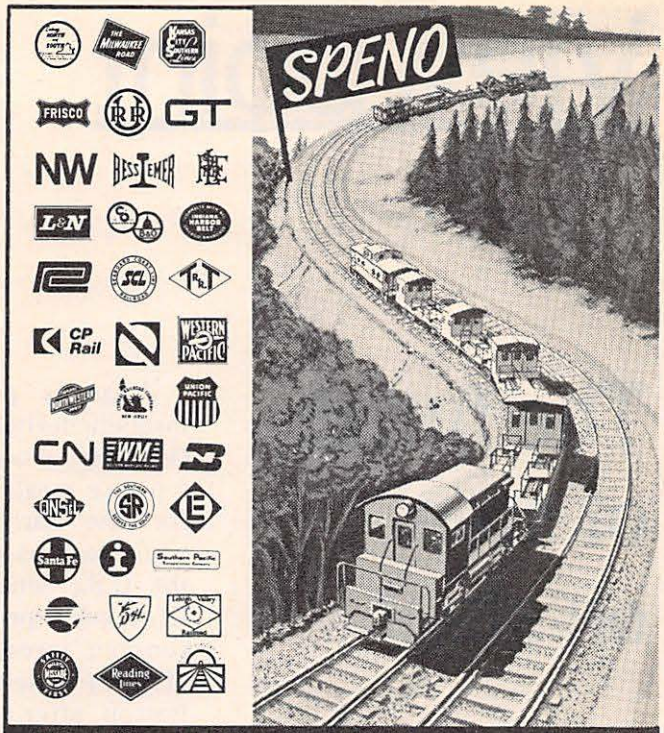

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Viewpoint

The future of steel on steel

Japan is proposing to parallel its New Tokaido Line with a magnetic-levitation system to become operational in 1981. West Germany, whose government has assisted in the development of three separate maglev systems now at the testing stage, is seriously planning for the early day when magnetically-levitated vehicles will be whooshing passengers through heavily-traveled corridors at 300 mph. In the U.S., Senators Edward Kennedy (D.-Mass.) and Lowell Weicker (R.-Conn.) proposed some time ago that the Federal government consider investing around $5 billion in a tracked air cushion vehicle (TACV) system in the Northeast Corridor between Washington and Boston, after an interim outlay of $500 million to improve the present roadway. Meanwhile, the Senate has approved expenditure of $8 million for study of an advanced (TACV or maglev) system on the West Coast, extending possibly from Tijuana to Vancouver; the proposal is now in the House, where it has an enthusiastic sponsor in Rep. Brock Adams (D.-Wash.) It was Congressman Adams who early this summer visited Krauss-Maffei's maglev test site just outside of Munich and came back such a convert that he declared, in an interview with Railway Age, that the day of steel-on-steel passenger transportation was rapidly nearing an end, at least as far as the U.S. was concerned. Mr. Adams said that in his view it was time for a quantum jump.

FRENCH TURBOS en route to the U.S. for Midwest service.

Does all of this mean curtains for the conventional train?

The answer is an emphatic "no." Before becoming excessively infatuated with the advanced technologies, Mr. Adams and others should look carefully at those countries which are most advanced in implementing them.

The fact is that the conventional train occupies a very important place in the present, near-future and far-future plans of both Japan and Germany.

It is not intended that maglev replace the standard train; rather, it will supplement it. Speeds of 300 mph in a corridor between Hamburg and Nuremberg will be all well and good. But this kind of system will do very little for the passenger who wants to go from Hamburg to Hannover, or from Nuremberg to Augsburg. It is for this reason that West Germany is still designing and building conventional medium- and high-speed rail lines and rail vehicles, and will be for the foreseeable future. It is for this reason that Japan is still building conventional lines at a furious pace, and has more on the drawing boards.

Right now, Amtrak is taking delivery of two French Turbos and has an option for eight more. Meanwhile, U.S. suppliers have been asked to draw up detailed specs for an initial 100 new conventional, locomotive-hauled cars. Good for Amtrak.

Maglev, we believe, is coming. Amtrak, we believe, will one day be operating maglev trains. But they will no more replace conventional trains than "flying boxcars" have replaced the covered hopper.

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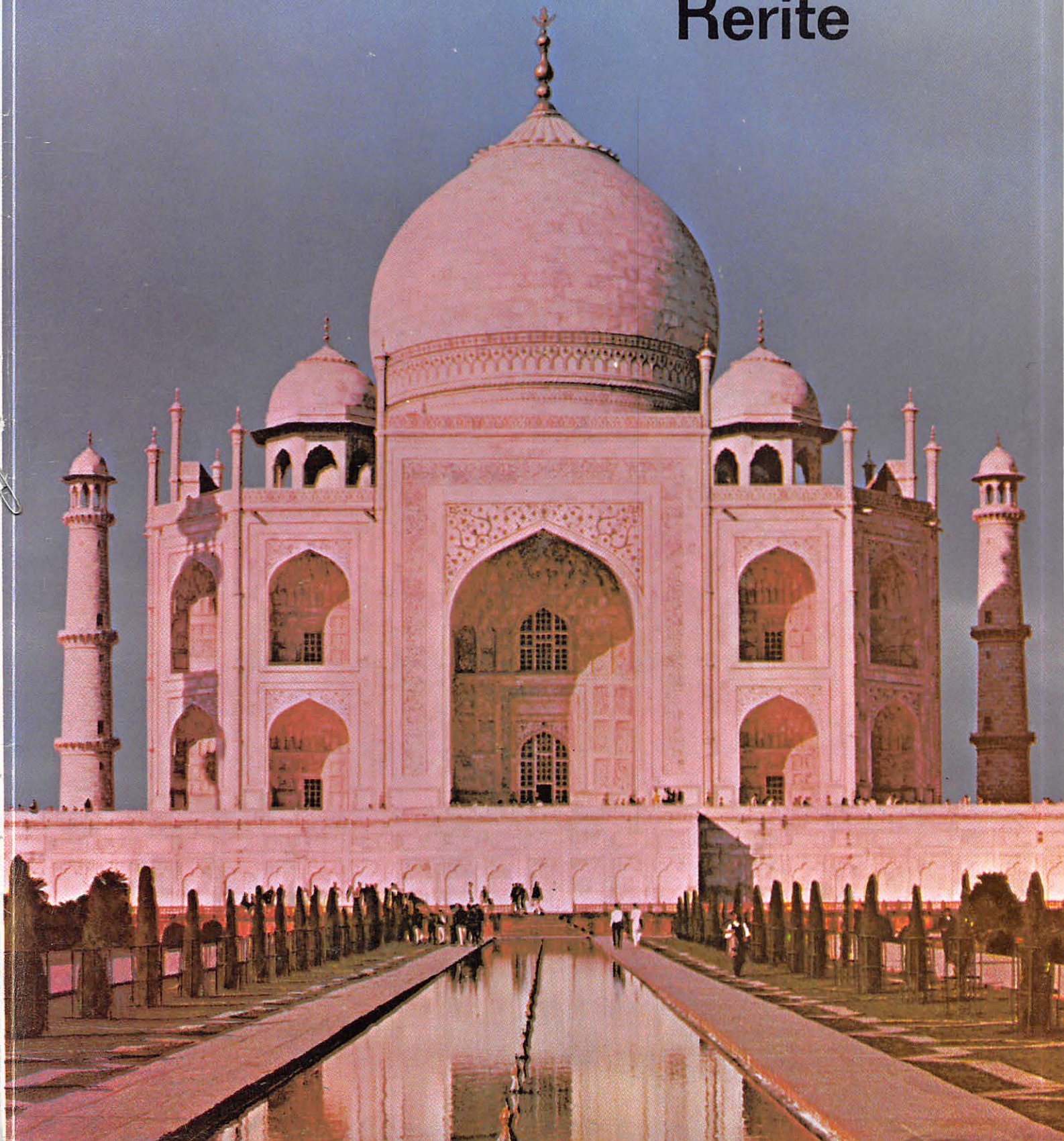

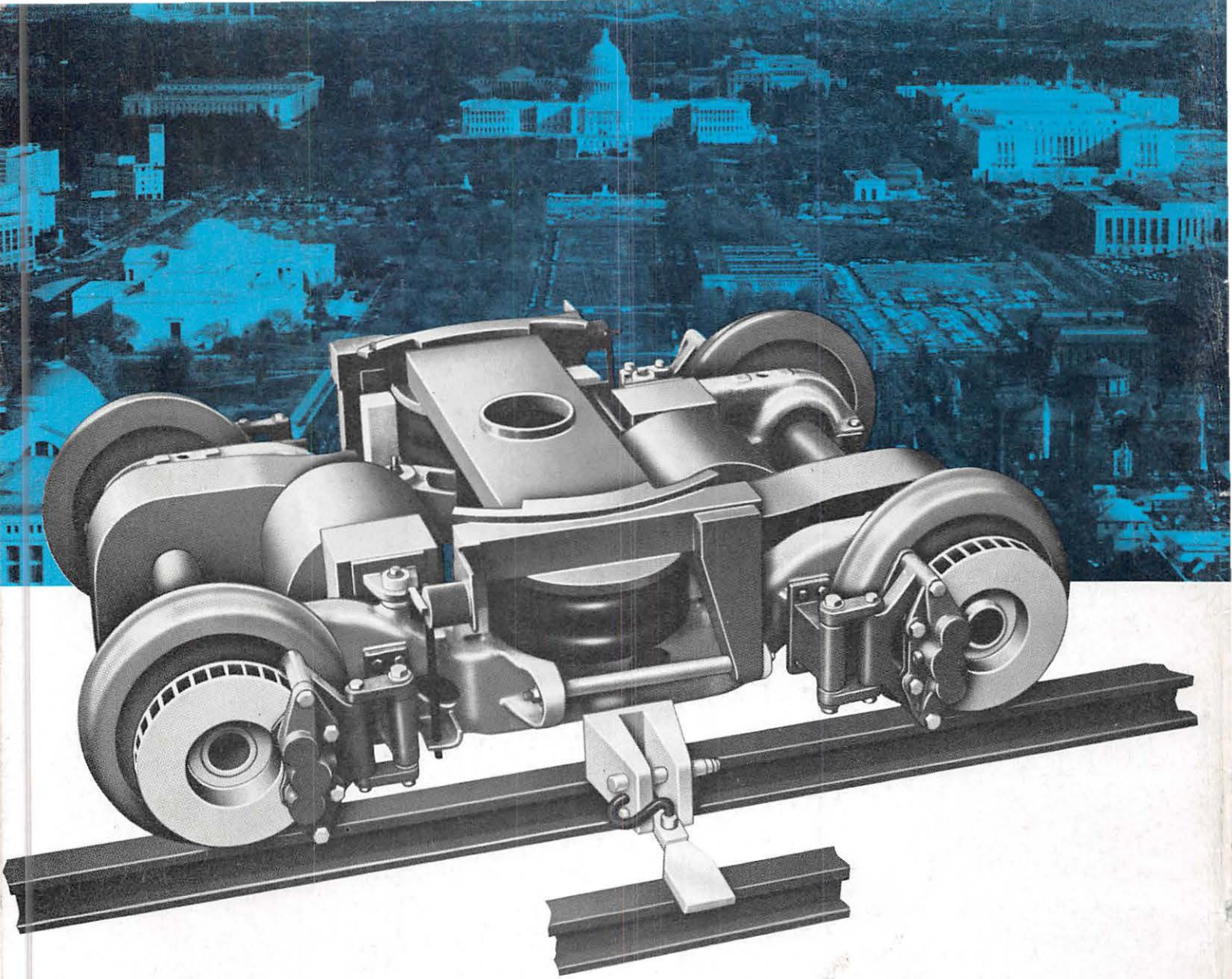

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